Purpose of the Catalog

The Undergraduate Catalog is the official source of the University’s undergraduate academic programs, courses, policies, and procedures. The catalog should be used as a guide in planning a course of study and in meeting requirements for graduation. See the Table of Contents and Index for an overview of the information provided.

The course offerings and requirements of The University of Tennessee are continually under examination and revision. This catalog is not intended to state contractual terms and should not be regarded as a contract between the student and the institution.

Each semester a Timetable of Classes is produced and is available on the web at http://cpo.utk.edu. The Timetable lists those courses that will be offered during the semester, as well as times and locations. Not all courses listed in this catalog are offered every semester.

Current information about the University, its programs and policies can be found at:

- The University of Tennessee Homepage: http://www.utk.edu/
- Office of the Vice-President and Provost: http://provost.utk.edu/
- Office of the University Registrar: http://web.utk.edu/~registra/
- Undergraduate Admissions: http://admissions.utk.edu/undergraduate/
- Division of Student Affairs: http://web.utk.edu/~student/
- Office of the Dean of Students: http://web.utk.edu/~homepage/
- Office of the Bursar: http://web.utk.edu/~bursar/
- Office of Financial Aid and Scholarships: http://web.utk.edu/~finaid/

EEO/TITLE IX/AA/SECTION 504 STATEMENT

The University of Tennessee does not discriminate on the basis of race, sex, color, religion, national origin, age, disability, or veteran status in provision of education programs and services or employment opportunities and benefits. This policy extends to both employment by and admission to the University.

The University does not discriminate on the basis of race, sex, or disability in the education programs and activities pursuant to the requirements of Title VI of the Civil Rights Act of 1964, Title IX of the Education Amendments of 1972, Section 504 of the Rehabilitation Act of 1973, and the Americans with Disabilities Act (ADA) of 1990.

Inquiries and charges of violation concerning Title VI, Title IX, Section 504, ADA, the Age Discrimination in Employment Act (ADEA), or any of the other above referenced policies should be directed to the Office of Equity and Diversity (OED); 1840 Melrose Avenue; Knoxville, Tennessee 37996-3560; telephone (865) 974-2498 (TTY available). Requests for accommodation of a disability should be directed to the ADA Coordinator at the Office of Human Resources Management; 600 Henley Street; Knoxville, Tennessee 37996-4125.

In accordance with the Tennessee College and University Security Information Act of 1989 and the Student Right-to-Know and Campus Security Act, the University of Tennessee has prepared a report containing campus security policies and procedures, data on campus crimes, and other related information. A free copy of this report may be obtained by any student, employee, or applicant for admission or employment from the Office of the Dean of Students; The University of Tennessee; 413 Student Services Building; Knoxville, Tennessee 37996-0248.

A project of the Office of the University Registrar, 209 Student Services Building, Knoxville, Tennessee 37996-0200, with assistance from Creative Services, (865) 974-2225. Revisions: 6451.
Publication Authorization Number: E17-0405-002-003-03.
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Commissioner of Agriculture
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# Academic Calendar for 2003-2004

## FALL SEMESTER, 2003

- **Wednesday, August 20**: Classes Begin
- **Monday, September 1**: LABOR DAY HOLIDAY
- **Wednesday, October 8**: First Session Classes End
- **Thursday, October 9**: Second Session Classes Begin
- **Thursday-Friday, October 16-17**: FALL BREAK
- **Thursday-Friday, November 27-28**: THANKSGIVING HOLIDAYS
- **Tuesday, December 2**: Classes End
- **Wednesday, Friday, December 3, 5**: Study Period
- **Monday-Thursday, December 4, 8-11**: Final Examinations
- **Sunday, December 14, 3:00 p.m.**: Commencement

## SPRING SEMESTER, 2004

- **Monday, January 12**: Classes Begin
- **Monday, January 19**: MARTIN LUTHER KING, JR. HOLIDAY
- **Monday, March 1**: First Session Classes End
- **Tuesday, March 2**: Second Session Classes Begin
- **Monday-Friday, March 8-12**: SPRING BREAK
- **Friday, April 9**: SPRING RECESS
- **Wednesday, April 28**: Classes End
- **Thursday-Friday, April 29-30**: Study Period
- **Monday-Friday, May 3-7**: Final Examinations
- **Saturday, May 8, 9:00 a.m.**: Commencement

## MINI-TERM 2004

- **Monday-Friday, May 10-28**: Mini-Term
- **Monday, May 31**: MEMORIAL DAY HOLIDAY

## SUMMER TERM 2004

- **Tuesday, June 1**: Classes Begin
- **Friday, July 2**: First Session Ends
- **Monday, July 5**: INDEPENDENCE DAY HOLIDAY
- **Tuesday, July 6**: Second Session Begins
- **Friday, August 6**: Second Session Ends
- **Saturday, August 14**: Commencement*

*There is no commencement ceremony in the summer. This date is the official graduation date that will appear on the transcript.

## The Academic Calendar is available on the web site of the Office of the University Registrar:

[http://web.utk.edu/~registra/acad_cal.html](http://web.utk.edu/~registra/acad_cal.html)
Glossary

Academic Calendar – An official list of dates found at the beginning of the Undergraduate Catalog. The Academic Calendar specifies the dates for semesters and terms, examination periods, holidays, periods classes are not in session, and commencement.

Academic Discipline – A subject area (e.g. history, political science, psychology).

Academic Review – A status that indicates a student is in academic difficulty. Students are placed on Academic Review when either their cumulative grade point average (GPA) falls below 2.0 for one semester or when their semester GPA falls below 2.0 for two consecutive semesters regardless of their cumulative GPA. See the full policy on page 43.

Academic Second Opportunity – A policy designed to assist the student who was not successful in progressing toward a degree during a previous attendance at The University of Tennessee but who is now performing satisfactory work. See the full policy on page 43.

Academic Year – The part of the year that includes the Fall and Spring Semesters.

Advanced Placement (AP) Credit – Freshmen admitted to UT may receive AP credit on the basis of performance on one or more of the Advanced Placement Examinations offered by the College Entrance Examination Board. Each participating department decides on the acceptable score for credit.

Advisor – A department or college-based faculty or staff member who meets with students each semester to discuss curricular choices and progress toward achieving educational goals.

Audit – A registration status that allows a student (with the approval of the instructor) to enroll in a course without receiving credit. See the full policy on page 42.

Baccalaureate or Bachelor’s Degree – Awarded for completion of an undergraduate curriculum. A bachelor’s degree is comprised of general education courses, a major, elective courses, and, in some cases, a minor. B.A. is the Bachelor of Arts degree and B.S. is the Bachelor of Science degree.

Bursar–See Office of the Bursar.

Catalog – A resource of all academic policies and procedures, college and degree requirements, faculty, and course descriptions. UT’s Undergraduate Catalog is published yearly and is subject to change. Undergraduate students at UT may meet graduation requirements as published in a single catalog provided that catalog was in effect when the student entered UT and is not older than six years.

Catalog Year – The year during which the regulations of a specific edition of the Undergraduate Catalog apply.

Classification – Level of progress toward a degree. Classifications are: freshman, sophomore, junior, or senior, depending on the number of semester hours passed.

Collateral area - Classes in a discipline or subject related to the major or concentration but offered by a different department. For example, in the College of Business Administration, the major in Management offers a collateral option.

College – An academic unit of the University. Each college represents an organization of related departments. (The Colleges of Nursing and Social Work do not have departments.)

Commencement (also known as Graduation) – A formal ceremony in which colleges award degrees to graduating students.

Concentration – A focus within the major. For example, Public Relations is a concentration of the Advertising major.

Contact Hours – The number of hours the class meets per week.

Core Courses – Classes that all students in a major program are required to take.

Correspondence – A type of independent study for individuals who want to study out-of-class at their own pace. See: Academic Policies, p. 40 and Department of Distance Education and Independent Study, p. 206.

Course – A specific subject studied within a limited period of time. Courses may utilize lecture, discussion, laboratory, seminar, workshop, studio, independent study, internship, or other similar teaching formats to facilitate learning.

Course Load – The total number of credit hours taken in a semester.

Course Number – The three-digit number that identifies a specific course, such as 101 in English 101.

Course Title – The name of a specific course that indicates subject and content. English Composition I is the course title of English 101.

Corequisite (Coreq.) – Specific conditions, requirements, or courses that must be completed at the same time as another course.

Credit – The number of credits assigned to a course is generally based upon the amount of time the class meets each week. For example, a three-credit lecture class meets for approximately three hours per week.

Credit by Examination – See Proficiency.

Credit Hours – The numerical unit of credit earned for satisfactory completion of a particular course. Each credit hour is roughly equivalent to one hour of class time per week. Most lecture courses are three credit hours. Laboratories do not generally reflect credit hours equivalent to the number of hours they meet.

Curriculum – A program of courses that meets the requirements for a degree in a particular field of study.

Degree Audit Report System (DARS) – An automated record of a student’s academic progress toward degree completion in his/her major. The DARS audit is a two-column report that contains all requirements and sub-requirements for a specific degree program. Because the system is currently in development, DARS audits are not available for all majors. Final certification of degree requirements rests with the Office of the University Registrar.

Degree – Official recognition for completion of a curriculum.

Department – A unit within a college representing a discipline. For example, the Department of English is in the College of Arts and Sciences.

Departmental Exam – A common final exam given to all sections of a course at a designated time. Departmental final exams are usually scheduled in a large room rather than the location where the class met during the term. See Timetable of Classes.

Discipline – An area of study representing a branch of knowledge, such as mathematics.

Dismissal – When a student’s academic performance is consistently poor over time and his/her GPA is below 2.0, he/she will no longer be allowed to enroll.

Drop/Add – Changing a student’s course schedule by adding and/or dropping a course or courses.

Electives – Courses selected at a student’s discretion. Electives may be partially restricted (selected from a specified group of courses identified to fulfill a particular requirement) or they may be “free” electives (selected from any courses for which the student has proper prerequisites).

Final Exams – Tests or exercises given at the end of a term. A schedule for Final Exams is listed in the Timetable each semester.

Grade Point Average (GPA) – A measure of scholastic performance. The GPA is obtained by dividing the number of grade points by the hours of work attempted, where A = 4 points, B+ = 3.5 points, B = 3 points, C+ = 2.5 points, C = 2 points, D = 1 point, and F = 0 points.

Incomplete – Under extraordinary circumstances and only at the discretion of the instructor, a grade of “I” (Incomplete) may be assigned to a student whose work is satisfactory but who has not completed a portion of the course. See the full policy on page 41.

Independent Study – Academic work completed in consultation with a faculty member outside of the regular course offerings.
Lab (laboratory) – In labs, students apply lecture material in small-group situations that include experiments, assignments, and projects.

Lecture - Teaching method in which the professor presents information to the students who take notes, ask questions, and have dialogue with the professor.

Lower Division (LD) – Courses on the 100- or 200-level that cover introductory content.

Major – A student’s principal field of study that commonly consists of approximately 25% of the total credit hours needed to earn a degree.

Matriculation – The first enrollment following admission as a student.

Minor – A secondary field of study requiring fewer credits than the major.

Office of the Bursar – The office where payments of tuition and fees are made.

Office of the University Registrar – The office that plans and oversees registration, academic record maintenance, transcript preparation, graduation, degree audit report system, curricular records, and university catalogs.

Option – An approved group of courses creating a specialty within a major field of study.

Plagiarism – Using the intellectual property of someone else without giving proper credit. The undocumented use of someone else’s words or ideas in any medium of communication (unless such information is recognized as common knowledge) is a serious offense, subject to disciplinary action that may include failure in a course and/or dismissal from the University. See Honor Statement on page 36.

Prerequisite (Prereq.) – Specific conditions, requirements, or classes that must be completed before enrolling in another course. For example, English 101 is a prerequisite for English 102.

Proficiency – Credit received when a student takes an oral or written examination without enrolling in a course. The University policy is to allow each individual department to determine which of its courses, if any, can be passed by proficiency. See the full policy on page 43.

Progression requirements – Requirements used by some colleges or degree programs (usually at the end of the sophomore year) to determine if students have successfully completed prerequisite courses before accepting them into a specific major.

Registrar – See Office of the University Registrar.

Registration – The act of signing up for classes on the Web (cpo.utk.edu) or by the touchtone registration system.

Satisfactory/No Credit Grading (S/NC) – An alternative to the standard grading system (A, B, C, D, F). See the full policy on page 41.

Section – One of several classes of the same course. In the Timetable, a five-digit code is used to identify each section of each course offered.

Semester or Term – Semester and term are used to identify the formally designated period during which classes are scheduled. Fall semester begins in August and Spring semester begins in January.

Seminar – A form of small group instruction, combining independent research and class discussions, under the guidance of a professor.

Sequence – A series of courses within the same subject area. Generally, these courses are taken in numerical order. An example of a sequence is: History 221-222 (History of the United States).

Survey course - A course that covers briefly the principal topics of a broad field of knowledge.

Syllabus - A course outline provided by the instructor that delineates course requirements, grading criteria, course content, faculty expectations, deadlines, examination dates, grading policies, class attendance requirements, and other relevant course information.

Timetable of Classes – The official schedule of classes produced each semester by the Office of the University Registrar. The most up-to-date information can be found online at cpo.utk.edu.

Track – A separate route leading to the same degree but with different requirements.

Transcript – The official record of a student’s coursework maintained by the Office of the University Registrar.

Upper Division (UD) – Courses numbered in the 300- and 400-level which cover more in-depth content.

Withdrawal – Officially dropping all courses for a given term.
Majors Listed Alphabetically with Concentrations

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Majors and Concentrations, continued

Bachelor of Science in Computer Engineering
Bachelor of Science in Civil Engineering
Bachelor of Science in Communication
Bachelor of Science in Computer Engineering
Bachelor of Science in Criminal Justice
Bachelor of Science in Cultural Issues
Bachelor of Science in Environmental and Sustainable Resources
Bachelor of Science in Environmental Science
Bachelor of Science in Environmental Studies
Bachelor of Science in Forestry
Bachelor of Science in Global Studies
Bachelor of Science in Health Science
Bachelor of Science in History
Bachelor of Science in Human and Social Development
Bachelor of Science in Human Ecology
Bachelor of Science in Human Resources Management
Bachelor of Science in Information Technology
Bachelor of Science in International Business
Bachelor of Science in International Studies
Bachelor of Science in International Studies
Bachelor of Science in Journalism
Bachelor of Science in Management
Bachelor of Science in Mathematics
Bachelor of Science in Economics
Bachelor of Science in Education
Bachelor of Science in Electrical Engineering
Bachelor of Science in Engineering Physics
Bachelor of Science in Environmental and Soil Sciences
Bachelor of Science in Forestry
Bachelor of Science in Human Ecology
Bachelor of Science in Interior Design
Bachelor of Science in Materials Science and Engineering
Bachelor of Science in Mechanical Engineering
Bachelor of Science in Nuclear Engineering
Bachelor of Science in Nursing
Bachelor of Science in Plant Sciences and Landscape Systems
Bachelor of Science in Service Management
Bachelor of Science in Social Work
Bachelor of Science in Wildlife and Fisheries Science

Undergraduate Degrees • 2003-2004
Listed Alphabetically

Bachelor of Architecture
Bachelor of Arts
Bachelor of Arts in Communication
Bachelor of Fine Arts
Bachelor of Music
Bachelor of Science
Bachelor of Science in Aerospace Engineering
Bachelor of Science in Agriculture
Bachelor of Science in Animal Science
Bachelor of Science in Biomedical Engineering
Bachelor of Science in Biosystems Engineering
Bachelor of Science in Business Administration
Bachelor of Science in Chemical Engineering
Bachelor of Science in Chemistry
Bachelor of Science in Civil Engineering
Bachelor of Science in Communication
Bachelor of Science in Computer Engineering
Bachelor of Science in Education
Bachelor of Science in Electrical Engineering
Bachelor of Science in Engineering Physics
Bachelor of Science in Environmental and Soil Sciences
Bachelor of Science in Forestry
Bachelor of Science in Human Ecology
Bachelor of Science in Interior Design
Bachelor of Science in Materials Science and Engineering
Bachelor of Science in Mechanical Engineering
Bachelor of Science in Nuclear Engineering
Bachelor of Science in Nursing
Bachelor of Science in Plant Sciences and Landscape Systems
Bachelor of Science in Service Management
Bachelor of Science in Social Work
Bachelor of Science in Wildlife and Fisheries Science
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The University of Tennessee
General Education Requirement

The goal of general education is to develop the basic skills, knowledge, attitudes, and judgments that are necessary for effective citizenship at all levels, from the local to the global; for responsible and fulfilling interactions with others and the environment; and for an enriched personal life. General education may also provide the basis for a major or professional concentration, but its aims are not career-specific. The following areas define the general education program for undergraduate curricula.

**English Composition (2 courses)**
Courses used to meet this requirement should develop the student’s ability in analytic and expository writing through the study of literature and writing applications. This requirement would normally be satisfied by completion of English 101-102 or equivalents, or by demonstration of proficiency.

**Mathematical Sciences (2 courses)**
Courses used to meet this requirement should develop the student’s ability to analyze and solve quantitative and logical problems.

**Humanities and the Arts (2 courses)**
Courses used to meet this requirement may concentrate either on critical analysis or practice of the arts. These might include the interpretation and analysis of works in one or more of the arts; consideration of significant philosophical, ethical, or religious text and issues; or participation in some area of the visual, spatial, musical, theatrical, rhetorical, or written arts.

**Historical Studies (2 courses)**
Courses used to meet this requirement should develop the student’s appreciation of continuity and change over time. Such courses would examine the connections and interactions between different aspects of the human experience through attention to significant political, social, economic, intellectual, and cultural developments in a chronological, balanced, and integrated framework.

**Social Sciences (2 courses)**
Courses used to meet this requirement should describe the structures of society, clarify the dynamics of cognitive and personal development through the life cycle, or analyze social, economic, or political issues.

**Natural Sciences (2 courses)**
Courses used to meet this requirement should describe the world around us using scientific methods and examine natural phenomena in terms of scientific principles. Such courses would normally contain a laboratory or field experience.

**Foreign Languages (2 courses at the intermediate level)**
Courses used to meet this requirement should facilitate the student’s ability to use a foreign language as a tool for oral and written communications and reading, including an understanding of the cultures for which it is the native language.

**Integrative Studies (2 courses)**
Courses used to meet this requirement may be of three broad types:
- Multicultural studies, which analyze international dimensions of critical issues or explore elements and values that shape a culture other than the student’s own;
- Interdisciplinary studies, which incorporate the methods and approaches from two or more disciplines to explore major issues; or
- Disciplinary perspective courses, which explore the potential and limits of a discipline in terms of its impact on individuals and society or examine a student’s major course of study from a value-oriented perspective.

All majors and college or school curricular requirements described in this catalog are in accordance with the University Requirement.
The University of Tennessee is the state’s flagship institution offering comprehensive programs of undergraduate, graduate, and professional education, research, and public service throughout the state. The University is composed of the campus at Knoxville, the Health Science Center at Memphis, the Space Institute at Tullahoma, and statewide institutes of agriculture and public service.

The campus at Knoxville holds the Carnegie classification of “doctoral/research university-extensive.” The campus offers more than 300 degree programs to its 26,000 students, who come from every county in Tennessee, every state in the nation, and more than 100 foreign countries.

A faculty of 1,200 provides high-quality educational experiences to students while also performing research and providing public service to the state and nation.

The University of Tennessee is a major research institution, attracting more than $114 million in research funding annually. Centers of Excellence in advanced materials, environmental biotechnology, structural biology, food safety, and information technology have exceeded projections for grant support since their founding in late 2000.

The University of Tennessee is one of the first major universities in the country to have campus-wide wireless access to the Internet and university databases. Every academic building and most administrative offices have wireless connections.

UT-Battelle manages the Oak Ridge National Laboratory, located 25 miles northwest of campus. The University of Tennessee’s involvement places it among a select group of universities that manage national laboratories for the U.S. Department of Energy.

ORNL is the University’s largest research partner. The Science Alliance, a Tennessee Accomplished Center of Excellence, strengthens research ties between The University of Tennessee and the laboratory and improves science programs at the University. As part of the Science Alliance, The University of Tennessee and ORNL share 12 Distinguished Scientists, who hold the rank of full professor at the University and senior scientist at the laboratory.

The University’s libraries have more than 3 million volumes, periodicals, computerized resources, and services.

Through public service, the University extends its resources throughout the state and nation. Lifelong learning programs are delivered online and via video and correspondence to off-campus students, particularly working adults seeking college degrees or career advancement.

**Historical Background**

The University of Tennessee, one of the nation’s older institutions of higher education, celebrated its Bicentennial in 1994. Two years before statehood was achieved, the legislature of the Southwest Territory, which later became Tennessee, granted a charter to Blount College, named in honor of William Blount, territorial governor.

Located near the center of Knoxville’s present business district, Blount College was nonsectarian in character, which was unusual for an institution of higher education in that day. The University has remained nondenominational and is said to be the oldest such institution west of the Appalachian Divide.

From the outset, Blount College was all-male, as were most colleges at the time. The restriction was ended in 1892 when the first women students were admitted. The University of Tennessee thereafter was fully coeducational.

In 1807 the state legislature changed the name to East Tennessee College, and in 1826 the present site at Knoxville, the 40-acre tract known as “The Hill,” was acquired. The college’s name changed again in 1840—to East Tennessee University.
The Civil War forced the institution to close, and its buildings were used as a hospital for Confederate troops and later occupied by Union troops.

East Tennessee University reopened after the war, and in 1869 the state legislature selected the University as the state’s Federal Land-Grant Institution, under terms of the Morrill Act passed by Congress in 1862. This enabled the University to broaden its offerings by adding agricultural and engineering courses to its curriculum, as well as military science, which the Morrill Act required.

The University has grown almost constantly since then. The medical campus, founded in Nashville and acquired by the University in 1879, moved to Memphis in 1911. The University of Tennessee at Martin, established in 1900 as a private institution, became part of The University of Tennessee in 1927. The University of Tennessee at Chattanooga was established in 1969 when the private University of Chattanooga merged with The University of Tennessee. The Space Institute, a graduate research and education center near Tullahoma, opened in 1964.

The Institute of Agriculture, headquartered in Knoxville, traces its beginnings to 1869 when The University of Tennessee became Tennessee’s land-grant institution, and the Institute for Public Service was founded and brought together several existing government and industrial outreach programs in 1971.

Today, The University of Tennessee System serves the entire state through three separate institutions: The University of Tennessee (Knoxville, Memphis, and Institutes of Agriculture, Public Service, and Space), The University of Tennessee at Chattanooga, and The University of Tennessee at Martin.

The University of Tennessee has among its faculty and alumni a Nobel laureate, seven Rhodes scholars, six Pulitzer Prize winners, and ten astronauts. University of Tennessee alumni number more than 250,000.

Accreditation

The University of Tennessee (Knoxville campus) is accredited by the Commission on Colleges of the Southern Association of Colleges and Schools to award baccalaureate, masters, and doctoral degrees.

ADMINISTRATIVE POLICIES

Inclement Weather Policy

The University of Tennessee will remain open except in the most severe weather conditions.

The Provost may officially close or suspend selected activities of the University because of extreme weather conditions. When a decision to close is reached, campus and local radio and TV stations will be notified so that appropriate announcements may be made.

If the University is officially closed, certain essential activities such as food services, physical plant, police, steam plant, and telephone services will continue to operate. Some facilities such as the library and University Center will, if possible, continue to function as a service to students and faculty. When the University is officially closed, its policy of Days of Administrative Closing will apply for staff exempt and staff non-exempt employees.

In the event of inclement weather when the University remains open, all faculty, administrators, and staff will be expected to make every reasonable effort to maintain their regular work schedules, but are advised to avoid undue risks in traveling. Employees who anticipate arriving late or not arriving at all should notify their immediate supervisors. Employees will have the option of charging their time off to annual leave or leave without pay; or, with approval, they may make up their lost work hours.

Students will be responsible for any academic work which they miss due to absences caused by severe weather conditions. It is the individual student’s responsibility to take the initiative to make up any missed class work, and it is the instructor’s responsibility to provide a reasonable opportunity for students to complete assignments or examinations missed due to such absences.

EEO/Title IX/Section 504 Statement

The University of Tennessee does not discriminate on the basis of race, sex, color, religion, national origin, age, disability, or veteran status in provision of education programs and services or employment opportunities and benefits. This policy extends to both employment by and admission to the University.

The University does not discriminate on the basis of race, sex, or disability in the education programs and activities pursuant to the requirements of Title VI of the Civil Rights Act of 1964, Title IX of the Education Amendments of 1972, Section 504 of the Rehabilitation Act of 1973, and the Americans with Disabilities Act (ADA) of 1990.

Inquiries and charges of violation concerning Title VI, Title IX, Section 504, ADA, the Age Discrimination in Employment Act (ADEA), or any of the other above referenced policies should be directed to the Office of Equity and Diversity (OED); 1840 Melrose Avenue; Knoxville, Tennessee 37996-3560; telephone (865) 974-2498 (TTY available). Requests for accommodation of a disability should be directed to the ADA Coordinator at the Office of Human Resources Management; 600 Henley Street; Knoxville, Tennessee 37996-4125.

Policy on a Drug-Free Campus And Workplace

In support of the Drug-Free Workplace Act of 1988 (Public Law 100-690) and the Drug-Free Schools and Communities Act of 1989, The University of Tennessee is notifying all students, faculty, and staff of the following University policy approved by The University of Tennessee Board of Trustees on 21 June 1990.

It is the policy of The University of Tennessee to maintain a safe and healthful environment for its students and employees. Therefore, University policy prohibits the unlawful use, manufacture, possession, distribution, or dispensing of drugs (“controlled substances” as defined in the Controlled Substances Act, 21 U.S.C. 812) and alcohol on University property or during University activities.

Violation of this policy is grounds for disciplinary action—up to and including immediate discharge for an employee and permanent dismissal for a student. Federal and state laws provide additional penalties for such unlawful activities, including fines and imprisonment (21 U.S.C. 841 et seq.; T.C.A. 39-6-401 et. seq.) Local ordinances also provide various penalties for drug and alcohol-related offenses. The University is bound to take all appropriate actions against violators, which may include referral for legal prosecution or requiring the individual to participate satisfactorily in an approved drug use/alcohol abuse assistance or rehabilitation program.
Aside from any University policy considerations, the use of illicit drugs and/or the abuse of alcohol may be harmful to your health. Some of the health risks associated with such use/abuse are listed: Alcohol Abuse Health Risks: liver damage—cirrhosis, alcoholic hepatitis; heart disease—enlarged heart, congestive heart failure; ulcers and gastritis; malnutrition; cancer—of the mouth, esophagus, stomach, liver; brain damage—memory loss, hallucinations, psychosis; damage to fetus if pregnant mother drinks; death—50% of fatal auto accidents involve alcohol; 31% of suicides are alcoholics. Drug Use Health Risks: overdosing—psychosis, convulsions, coma, death; long-term use—organ damage, mental illness, malnutrition, death; casual use—heart attack, stroke, brain damage, death; needles—infecions, hepatitis, AIDS, death. If a pregnant mother uses drugs, her baby can be born addicted or dead.

Individuals who are paid by The University of Tennessee from federal grants or contracts must notify the University of any criminal drug statute conviction for a violation occurring in the workplace within five days after such conviction. The University is, in turn, required to inform the granting or contracting agency of such violation within ten days of the University’s receipt of notification.

Employees and their families needing treatment information should call their local Personnel Office, Employee Assistance Program, or the State of Tennessee Employee Assistance Program (800-468-8369). Students needing treatment information should contact their campus Student Affairs Office, student health center, or counseling center.

Security Information
In accordance with the Tennessee College and University Security Information Act of 1989 and the Student Right-To-Know and Campus Security Act, The University of Tennessee has prepared a report containing campus security policies and procedures, data on campus crimes and other related information. A free copy of this report may be obtained by any student, employee or applicant for admission or employment from the Office of the Dean of Students, 413 Student Services Building.

ADMISSION TO THE UNIVERSITY OF TENNESSEE

As the state’s largest and most comprehensive university, The University of Tennessee seeks to provide high-quality educational programs for all students who have the academic ability and motivation to adapt to and profit from a baccalaureate education. Similar opportunities are available at the graduate level. While the majority of students at The University of Tennessee are residents of the State of Tennessee, the University welcomes qualified students from other states and from outside the United States. Students from a variety of cultures add richness and diversity to the total educational experience for all.

Requirements for Undergraduate Admission
Anyone interested in attending The University of Tennessee as an undergraduate student is encouraged to visit the web site of the Office of Undergraduate Admissions:

http://admissions.utk.edu/undergraduate/

Persons may also direct their inquiries to:

The Office of Undergraduate Admissions
320 Student Services Building
University of Tennessee
Knoxville Tennessee 37996-0230

Knoxville:
E-mail: admissions@utk.edu
Phone: (865) 974-2184
(800) 221-VOLS

Memphis Branch Office:
E-mail: admit2utm@utk.edu
Phone: (901) 448-8289

Nashville Branch Office:
E-mail: admit3utm@utk.edu
Phone: (615) 726-2688

Note: There are deadlines for admission and for consideration for competitive academic scholarships each semester. These deadlines are available from any sources listed above.

Academically Talented High School Students
Academically talented high school students enrolled in grades 9, 10, 11, and 12 in public or private school in Tennessee may apply to enroll and receive regular college credit from a Tennessee postsecondary institution if: (1) they receive the recommendation and approval of the high school principal and/or appropriate higher education institution personnel; (2) they have a grade point average equivalent to 3.2 or higher on a 4.00 scale; and (3) such placement is a part of the student’s planned Individual Educational Placement (IEP) as established by the multidisciplinary team process.

Students are encouraged to submit standardized test scores (ACT or SAT). Applications are subject to review and admission is not guaranteed.

Advanced Placement Examinations
Freshmen admitted to The University of Tennessee may receive credit on the basis of performance on one or more of the Advanced Placement Examinations offered each May by the College Entrance Examination Board in 16 subject areas. See “Academic Policies and Procedures” section of this catalog for additional information.

Transfer Applicants
The admission decision for transfer students with fewer than 30 earned transferable college-level hours will be based on the same criteria as new freshman applicants.

The admission decision for transfer students with 30 earned transferable college-level hours will be based on the college grade point average. Only those courses in which at least a C
was earned shall be eligible for transfer credit. Grades earned at other institutions are used only for admission, course placement, and other academic decisions. In order to be considered for admission to The University of Tennessee, a transfer applicant must have a minimum of a 2.0 grade point average (on a 4-point scale) overall in college credit courses considered for transfer credit. Some academic colleges or departments may require greater than a 2.0 for acceptance into certain programs.

For detailed information about transferring to The University of Tennessee, check the Admissions web site: http://admissions.utk.edu/undergraduate/.

Note: Students transferring to The University of Tennessee must earn 60 semester hours of credit at a four-year college or university and the last 30 semester hours of credit at The University of Tennessee.

Articulation Agreements

The University has articulation agreements with some Tennessee community colleges leading to admission with junior standing in particular majors at The University of Tennessee. These programs lead to the awarding of the associate degree by the specified community college and the baccalaureate degree by The University of Tennessee, provided the student successfully completes all the courses required in a particular program. Details on specific programs and requirements are available from the Office of the University Registrar web site http://web.utk.edu/~registra/ or from the specified community college.

Visiting Student Applicants

A visiting student is one who is actively enrolled in a program at another accredited institution of higher learning but who desires to enroll temporarily at The University of Tennessee. Visiting students are admitted for one semester only.

Re-entry Student Applicants

A re-entry student is one who has not been enrolled in school for three years or more prior to making application for admission to The University of Tennessee.

Senior And Disabled Applicants

Persons 60 years or older and/or totally disabled persons who are residents of Tennessee may audit courses without payment of fees if space is available in the individual class. Persons 65 years of age or older or totally disabled persons who are residents of Tennessee may enroll in courses for credit at reduced fees. Interested persons should inquire at the Office of the University Registrar.

International Student Applicants

All foreign nationals on non-immigrant visas are classified as international students whether they are applying to The University of Tennessee as freshmen or transfer students. In addition to the information below, additional information for international students is available from the International Admissions Office or from the Center for International Education.

To apply for admission as an undergraduate student, each international student is required to provide the following:
1. A completed application for undergraduate admission;
2. Authenticated copies of all secondary and post-secondary academic records. These records should describe courses of instruction in terms of years spent in school, types of subject matter covered, and grades earned in each subject.
3. Evidence of English proficiency according to the following requirements for those whose first language is not English.
a. Any applicant to the undergraduate program whose first language is not English—with the exception of some transfers from regionally accredited colleges or universities in the United States (see c below)—must present a “Test of English as a Foreign Language (TOEFL)” score of at least 193 (computer-based) or 523 (paper-based), earned within two years prior to application, before being admitted. Final consideration cannot be granted until test results are received by International Admissions from the TOEFL test agency.
b. The University of Tennessee English Placement Test must be taken prior to registration. This test will determine whether the student needs to take more English and, if so, at what level. The English Placement Test grants no credit. Students assigned to special English courses must enroll the first semester of attendance, stay continuously enrolled in the assigned courses until completion of all requirements, and complete the requirements within the first year of continued enrollment at The University of Tennessee.
c. An undergraduate student whose first language is not English is exempt from taking The University of Tennessee English Placement Test and from presenting a TOEFL score of 523 (or 193 on the computer-based TOEFL) provided that the student has satisfied all requirements for freshman composition with a grade of C or better at an accredited college or university in the United States. Freshmen English for Foreign Students does not exempt a student from presenting an acceptable TOEFL score.
d. A United States citizen or Permanent Resident may demonstrate English proficiency by submitting a minimum ACT English score of 21 (SAT verbal 510; 430 if taken prior to April, 1995) or TOEFL 193 (computer-based) or 523 (paper-based).
4. Applicants from certain countries are required to make a significant monetary deposit prior to issuance of Form I-20 to secure a student visa.
5. International students must enroll in the health and accident insurance plan provided by The University of Tennessee.
6. For international students, completed application forms and the processing fee must be received in the Office of International Admissions no later than the following dates: February 1 for Fall Semester; July 1 for Spring Semester; December 1 for Summer Term.

International students are subject to various enrollment limitation regulations comparable to those affecting U.S. citizens. The International Admissions Office will notify any applicant of any applicable regulations in effect at the time of application.
Fees for Sponsored International Students

An administrative management fee will be charged to sponsoring agencies of international students whose programs require special administrative or management services beyond those normally provided. Fees are $250 per semester and $100 per summer session.

Students Seeking Readmission to the University

Submission of an application for readmission is required for a student previously seeking a degree who has withdrawn from The University of Tennessee, who has been absent for a term other than the summer term, or who has been academically dismissed. A readmission applicant may be asked to appear before the Committee on Readmission. A student who previously attended as a non-degree student and wants to re-enter as a degree-seeking student must complete an application for undergraduate admission unless he/she obtained a degree from The University of Tennessee (main campus).

A student who has attended another college or university since attending The University of Tennessee must have an official transcript sent to the University.

Students dismissed when they last attended the University, who left in Academic Review, and those who have registered at another institution of higher education since their last enrollment at The University of Tennessee must apply well in advance, generally three to four months prior to the beginning of the term. Submitting an application for readmission does not guarantee admission.

Official transcripts of any transfer work attempted after a student’s enrollment at The University of Tennessee must be submitted before a decision on readmission can be made. For specific deadline dates, students should consult the Office of Undergraduate Admissions, 320 Student Services Building.

To register for courses at any other branch, center, or division of the University controlled by the Knoxville campus, a student must meet the readmission regulations that govern courses for credit at the Knoxville campus. However, students may register for correspondence courses (with prior permission of their college dean) without being readmitted.

Residency Classification for the Purpose of Paying University Fees and for Admission Purposes

Initial residency classification is determined by an Admissions Processor from information contained on The University of Tennessee Application for Admission. Notice of classification is sent at the time the applicant is notified of admission. Students classified as out-of-state, or whose status is unclear, should submit an Application for Residency Reclassification to the Residency Classification Office. The deadline for submission of the completed classification application and supporting documentation is the tenth calendar day after classes begin for the semester. Classification will be determined and the applicant will be notified by mail. Additional information regarding the State of Tennessee regulations for classification may be found at the Office of the University Registrar web site, http://web.utk.edu/~registra/.

Academic Common Market

The Academic Common Market is an agreement among states for sharing unique programs. Participating states can make arrangements for their residents who are fully admitted to specific programs at The University of Tennessee (Knoxville campus) to enroll on an in-state tuition basis if these programs are not available in the state of residence. Cooperating states in the Academic Common Market are Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia. Bachelor’s, master’s, and doctoral programs at The University of Tennessee are approved by the Academic Common Market for residents of these states to enroll at in-state tuition rates.

For additional information, visit the Southern Regional Educational Board at: http://www.sre.org or contact Norma Harrington, Office of Undergraduate Admissions (865) 974-6120.

UNIVERSITY FEES

For the most current listing of tuition and fees at The University of Tennessee, see: http://web.utk.edu/~bursar/

University fees and other charges are determined by the Board of Trustees and are subject to change without notice. All student fees are due in advance.

All charges and refunds will be made to the nearest even dollar. All charges are subject to subsequent audit and verification. The University reserves the right to correct any error by appropriate additional charges or refunds.

All students must confirm their attendance by (1) making the minimum payment; (2) signing a Confirmation of Attendance form; or (3) setting their Confirmation of Attendance on the web at CPO.UTK.EDU if no fees are due.

If the student does not owe fees due to a waiver (staff, GA, GTA, GRA, etc.), financial aid including scholarships, or if fees are paid by another source, a signed Confirmation of Attendance Form must be received by the Bursar’s Office or the student must set his/her confirmation on the web at CPO.UTK.EDU on or before the due date published in the Time Table of Classes each semester. The schedule will be canceled if one of the above is not accomplished each term on or before the published due date. This includes graduate assistants, teaching assistants, teaching associates, research assistants, staff and others whose fees may be billed, prepaid, or waived. Late registration fees are applicable to students who register during final registration.

The University is authorized by statute to withhold diplomas, grades, transcripts, and registration privileges from any students until their debts and obligations owed to the University are satisfied.

Part-time students may elect to pay fees computed by semester hour credit (or audit) at the rates shown on the above web site, with the total charge not to exceed the regular maintenance fee for in-state students or the maintenance fee plus tuition for out-of-state students.

All students both in- and out-of-state are required to pay the established maintenance fee. In addition, tuition is required of all students who are classified as non-residents for fee assessment purposes.
VOLXpress

VOLXpress is The University of Tennessee’s centralized accounting system. Students may pay their fees via the mail, in person, or on the web at CPO.UTK.EDU. Through VOLXpress, statements are mailed to each student's billing address. The statement includes class schedules, drop/add activity, current tuition and fees, fee waiver information, fines and past-due amounts, pending financial aid that can be credited toward fees, any excess funds from scholarships and/or loans and choices about how to receive them.

VOLXpress is a convenient method for students to take care of business from home. Students who register and pay early will receive the greatest benefit if the payment deadlines are observed.

Each student must submit any change of address on the web at CPO.UTK.EDU to ensure timely receipt of a VOLXpress statement. Each Timetable of Classes lists the dates of registration and when and if statements will be mailed. Failure to receive a statement does not relieve the student of his/her obligation to pay on or before the due date.

University Programs and Services Fee

http://web.utk.edu/~bursar/volxfees.html

The purpose of the University Programs and Services Fee (UPSF) is to provide non-instructional facilities and programs of an educational, cultural, social, and service nature for University of Tennessee students. The fee has three components which include program, health, and capital. The health portion of the fee is included only with the payment of the full UPSF (contact Student Health Service for additional information).

Students enrolled in nine or more hours are assessed the full-time University Programs and Services Fee. Students enrolled for fewer than nine hours are assessed a prorated fee based on the highest number of hours for which the student is enrolled at any time during the semester. The fee is non-refundable.

Graduate, teaching, and research assistants, teaching associates, and fellowship students must pay the University Programs and Services Fee, even if they have a waiver of fees (tuition and/or maintenance).

Any part-time student may elect to pay the health portion of the UPSF in addition to the standard prorated assessment. Part-time students enrolled in six or more hours may elect to pay the full-time UPSF instead of the standard prorated assessment.

Technology Fee

The purpose of the Technology Fee is to provide all students with improved access to the technological infrastructure, resources, and services at The University of Tennessee.

Graduate, teaching, and research assistants, teaching associates, and fellowship students, who may have a waiver of fees (tuition and/or maintenance), must pay the appropriate Technology Fee.

The Technology Fee is mandatory and may be refunded on the same percentage scale as maintenance and tuition charges.

Facilities Fee

The Facilities Fee is used to provide students with upgraded classroom facilities, expand information technology into the classroom, and assist in funding a backlog of campus and classroom projects that will enhance the University’s facilities.

Transportation Fee

The Transportation Fee is a mandatory fee assessed to all students enrolled in credit and audit courses. The fee is used to provide students with a convenient method of movement around campus. The fee will subsidize the costs associated with the new comprehensive campus transit system.

Fees for Courses Not Taken for Credit

Fees for courses audited are the same as for courses taken for credit. For fee purposes, courses listed for 0 credit hours are considered as one-hour courses.

Final Registration Late Fee

A late fee will be assessed to students who register during Final Registration (including those who were canceled during Priority Registration). Payment of fees or a Confirmation of Attendance form must be turned in to one of the Bursar’s Office locations by the Final Registration payment due date. This due date will be published in the Timetable available from the Office of the University Registrar. The Final Registration Late Fee is non-refundable.

See the Timetable of Classes for the dates and fees to be assessed during Final Registration.

Reinstatement Fee

VolXpress (fee) accounts which have a balance one month prior to the end of a term will be assessed a reinstatement fee, and grades will be withheld.

Returned Check Service Fee

All checks are deposited the day they are received. A $20 service charge will be assessed when checks fail to clear the bank on which they are drawn. Returned checks will not be redeposited. Cash or certified funds are required for payment of the returned check and service charges.

Any student who does not respond within 2 weeks from the date of the first notice may be assessed an additional $10 Service Charge.

Failure to clear returned checks will result in the forfeiture of all University services, including the receipt of grades, transcripts, schedule of classes, and check cashing/writing. Failure to pay may also result in additional late fees, collection costs, and reasonable attorney fees.

Deferred Payment Plan

Students in good financial standing will be offered a deferment of up to 50% of the total charges on their VolXpress statement. All financial aid must be applied toward fees before a deferment will be considered. A deferred payment service fee is assessed when any portion of tuition, fees, and other charges are deferred with the approval of the Bursar’s Office. An additional late payment fee will be assessed on each installment not paid on or before the due date. Failure to receive a statement
does not relieve students of their obligation to pay on or before the due date. An additional reinstatement fee will be assessed if fees are not paid by one month prior to the end of the term.

**Refunds**

Refunds are defined as the portion of maintenance and/or tuition and University housing/meal charges due as a rebate when a student withdraws or drops a portion of class hours. Refunds are also processed as a rebate on some fines/penalties paid such as parking fines, library fines, etc. Once a refund is determined to be appropriate, all amounts will be applied toward other outstanding fees/finances owed to the University at the time the refund is issued, including outstanding fees due on the Deferred Payment Plan. Any remaining refund balance will be refunded to the credit card charged or mailed to the student’s billing address.

**Refund/Charge of Fees for Withdrawal (Drop All Classes)**

After payment of fees and a Confirmation of Attendance Form has been submitted by the student, withdrawal for the semester must be by official notification to the Office of the University Registrar, 209 Student Services Building. Failure to attend class does not automatically withdraw or drop a student from college or class.

The effective date of the withdrawal is the date the withdrawal office is notified by completion of the official withdrawal request form. The appropriate percentage of fees (maintenance and tuition and technology fees only) will be charged unless this action is completed by the close of the day before the first official day of classes for the semester. Failure to notify the withdrawal office promptly when withdrawing could result in a larger fee assessment. Withdrawal does not cancel fees and charges already incurred. All charges and refunds will be made to the nearest even dollar.

The drop/add procedure cannot be used to withdraw from school for the semester. See the Timetable of Classes for the dates and percentage charges for the semester in question.

**Financial Aid Withdrawals (Repayments)**

Repayments are defined as the portion of aid, received by a student after University direct charges have been paid by that aid, which must be repaid when a student withdraws or is dismissed. The amount of repayment is determined by the Refund/Charge percentages stated previously.

Refunds and repayment to the Title IV programs are determined according to the formula published in the current Federal Student Financial Aid Handbook. The Financial Aid Office is responsible for calculating the amount of the refund and/or repayment and distributing the correct amount back to the financial aid program(s) according to the Refund/Repayment Allocation Policy.

For examples, see the Bursar’s Office Web Site at: http://web.utk.edu/~bursar/

**Refund/ Charge of Fees for Dropped Courses (Continue with a Reduced Course Load)**

Students who drop courses and continue with a reduced load are eligible for a refund only if the sum of charges computed at the semester-hour rate for the hours continued, plus the percentage assessed for the hours dropped, results in an amount less than that paid. A course on a student’s schedule is officially dropped, and the drop becomes effective, on the date the change of registration form is processed or the date the drop was entered on CPO or the registration telephone system. Any refund due for dropped courses will be made after the drop deadline. See the Timetable of Classes for the drop charge/percentage refund for the semester in question.

**Waiver of Fees**

Graduate assistants, teaching assistants and associates, research assistants, staff, and others whose fees are billed, prepaid, waived, or partially waived must confirm their attendance by making payment, signing a Confirmation of Attendance Form, or setting their confirmation of attendance on the web at CPO.UTK.EDU by the due date as published in the Timetable of Classes or their schedule will be canceled. If an appointment terminates during the term, the student owes the appropriate fees from the termination date until the end of the term.

Graduate students are not eligible for University of Tennessee employee spouse/dependent discounts.

**STUDENT FINANCIAL AID**

The University of Tennessee offers a comprehensive program of financial aid to students who would not otherwise be able to afford to attend. Through these federal, state, and university programs, an eligible student may receive one or more types of assistance. For additional information on any financial aid or scholarship program, please contact the Office of Financial Aid and Scholarships or view information online at http://web.utk.edu/~finaid.

Families applying for financial assistance based upon financial need (grants, scholarships, loans and employment) must complete a Free Application for Federal Student Aid (FAFSA) annually. Families desiring only a scholarship based on academics and/or merit are not required to complete federal financial aid applications.

To receive aid from federal student aid programs, a student must have financial need, with the exception of some of the loan programs. Students must also be U.S. citizens or eligible non-citizens, have a valid social security number, have a high school diploma or General Education Development (GED) certificate, be enrolled or accepted for enrollment as a regular student working towards a degree or certificate in an eligible program, make satisfactory academic progress, sign a statement of educational purpose and a certification statement on overpayment and default, and register with the Selective Service. Students may not receive aid for correspondence, distance education or telecommunications courses unless they are part of an approved associate, bachelor’s or graduate degree program.

When applying for financial aid, the Free Application for Federal Student Aid (FAFSA) must be completed. This information is used in a formula, established by the U.S. Congress, that calculates the Expected Family Contribution (EFC), an amount the student and his/her family are expected to contribute towards the student’s educational costs. Financial need is defined as the difference between the cost of attendance and a family’s contribution towards these educational expenses.

Cost of Educational Expenses Minus Expected Family Contribution = Financial Need
The University of Tennessee offers three general types of financial aid: scholarships and grants, loans, and part-time employment. These may be awarded individually or in a combination according to the needs of the family and student.

For additional information on application procedures, please contact the Office of Financial Aid and Scholarships.

**Priority Date for Applications**

Priority in awarding financial aid will be reserved for processed application data received on/before the priority application deadline of March 1. The University of Tennessee is unable to meet full financial need for all applicants; therefore, requests for financial aid are processed on both a date priority and financial need basis.

**Scholarships and Grants**

**Scholarships.** The University of Tennessee scholarship program is made possible through the generosity of funds provided to the university from individuals, alumni, outside foundations, private businesses, and civic organizations. The majority of the scholarship programs are coordinated by the Office of Financial Aid and Scholarships and are awarded based on demonstrated strong academic achievement and financial need. Individual colleges administer some undergraduate scholarships for currently enrolled students. Departments may require a separate application.

All scholarships are highly competitive and there are not sufficient funds to assist all qualified students. Most scholarships are awarded for one year, with the recipients competing for scholarships each year of enrollment.

**Federal Pell Grant.** Pell Grants are awarded only to undergraduate students who have not earned a bachelor’s or professional degree. A Federal Pell Grant does not have to be repaid. All undergraduates applying for need-based financial assistance from the University must apply for a Federal Pell Grant using the Free Application for Federal Student Aid (FAFSA).

**Federal Supplemental Educational Opportunity Grants.** This federal grant is for undergraduate students with exceptional need. Priority is given to students who receive a Federal Pell Grant. Students who are full or part-time may apply. Federal SEOG funds are limited, and do not require repayment.

**The Tennessee Student Assistance Award** is designed to further the educational opportunities to residents of the state who display financial need. Awards cover approximately one-half of the maintenance fees for Fall and Spring terms. More information may be obtained by writing to the Tennessee Student Assistance Corporation, 404 James Robertson Parkway, Suite 1950, Parkway Towers, Nashville, Tennessee 37243.

**Student Loans**

**Federal Perkins Loan.** This is a low-interest loan (currently 5%) for students with exceptional financial need as determined by the school. For undergraduate students, priority is given to Federal Pell Grant eligible students. The loan will be issued through the Office of Financial Aid and Scholarships, disbursed and repaid to the Student Loan Department in The University of Tennessee Bursar’s Office. Repayment begins following graduation, withdrawal, or when the student ceases to carry at least half-time enrollment.

Eligibility for the Federal Perkins Loan is determined when the student applies for federal aid using the Free Application for Federal Student Aid (FAFSA). The above regulations and provisions of the Federal Perkins Loan Program are correct as of this printing and are subject to change by federal legislation or regulation.

**The University of Tennessee Student Loan.** Student loans from university sources are available to currently enrolled students with a 2.0 or higher cumulative grade point average. A loan of an annual maximum of one and one-half times the amount of in-state fees paid per term can be extended up to $4,000. One surety or cosigner who meets specific credit requirements is required for each promissory note and a new promissory note must be completed each year a loan is received. The interest rate is 6 percent per year payable on July 1 of each year.

Repayment of the amount borrowed plus any unpaid accrued interest shall begin six (6) months following graduation, withdrawal, or when the student ceases to carry at least half-time attendance. The above regulations and provisions are correct as of this printing and are subject to change by the Board of Trustees.

**Federal Stafford Loan Program.** This is a low-interest loan made by a lender, such as a bank, credit union, or savings and loan association. These loans are insured by a Guaranty agency in each state and reinsured by the Federal Government.

To receive a Federal Stafford Loan, a student must apply for federal aid with the Free Application for Federal Student Aid. The student must be in good standing with the University and must be enrolled or admitted in at least a half-time degree program. Federal Stafford loans are available to students on need-based eligibility and non-need based circumstances. Students determined eligible for the subsidized (need-based) Stafford Loan program will have interest subsidies paid by the federal government to the lending institution while the borrower is in school. Unsubsidized (non-need based) Stafford loans are available to students regardless of need. Interest will accrue while the borrower of an unsubsidized Stafford loan is in school. The student has the option to pay this interest on a monthly or quarterly basis or allow it to accrue and capitalize.

Two disbursements of the loan will be made to the borrower; one at the time of enrollment and one in the middle of the loan period. Some first-year undergraduate students who are first time Stafford Loan borrowers will not receive the first loan disbursement until 30 days after the day the program of study begins.

Some first-time borrowers must receive Entrance Interview Loan Counseling at the Financial Aid Office before receiving the first disbursement of loan funds. Charges of up to 3% will be deducted from the loan disbursements for federal government and bank loan costs. Repayment will begin no earlier than 6 months after graduation, withdrawal, or less than half-time enrollment. Certain circumstances may allow a borrower to defer payment or cancel a portion of a loan if requested by the borrower through the lending institution. The above regulations and provisions of the Stafford Loan Program are correct as of this printing and are subject to change by federal legislation or regulation.

**PLUS Program.** Federal PLUS loans are available to parents of dependent students enrolled at least half time in a degree seeking program. This low-interest loan program is available to students in good standing at the University. A PLUS disbursed on or after July 1, 1993 will have a variable interest rate.
rate which is determined each June (check with lending institution for the current interest rate). Charges of up to 3% will also be deducted from the loan disbursements for federal government and bank loan costs.

A Federal PLUS may be requested by the parent borrower for up to the student’s cost of education minus any estimated financial aid received. Funds will be disbursed to the school and made co-payable to the parent borrower and the school. PLUS loans are subject to credit checks at the lending institution. Repayment of principal and interest begins sixty (60) days after the final loan disbursement. Certain circumstances may allow the lending institution to defer payment or cancel a portion of a loan if requested by the borrower. The above regulations and provisions of the PLUS program are correct as of this printing and are subject to change by federal legislation or regulation.

**Student Employment**

Many students are employed part-time in order to supplement financial aid or other sources of support while at the University. Such employment offers valuable aid and develops good working skills. However, the more time spent in employment, the less available for preparing for classes and involvement in campus life, two of the most important factors contributing to academic success. For those who find employment while classes are in session to be necessary, the Office of Financial Aid and Scholarships administers the Federal Work Study Program. Career Services administers the Student Employment Service.

**Federal Work-Study.** The federal work-study program provides jobs for students who have financial need and who must earn an average of their educational expenses. Eligible students are placed in jobs on campus where they can work a maximum of 20 hours per week. Jobs are available in a wide variety of academic departments and other campus units. The rate of pay is above federal minimum wage.

**Student Employment Service** operates as a central referral agency for all University of Tennessee students who are eligible U.S. residents. It coordinates listings of part-time employment from both University and private employers with the requests of students seeking employment. Part-time jobs average from 15 to 20 hours per week.

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**STUDENT AFFAIRS AND ACADEMIC SERVICES**

**Adult Student Services Center**

http://web.utk.edu/~adultssc/

The Adult Student Services Center was created to help students who have delayed or interrupted their college education for a period of time and to assist students older than average (25 years or older).

Specifically, the office works with other departments on campus to provide admissions and readmissions counseling, academic advising, peer support programs, orientation programs, career information, financial aid, and educational workshops for adult students. Personalized referral for university services will be made as well.

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**The Black Cultural Center**

Minority Student Affairs
http://web.utk.edu/~omsa/

Minority Student Affairs and the Black Cultural Center are an integral part of The University of Tennessee. Minority Student Affairs provides academic, cultural and social outlets through programs and services as an on-going part of the University’s retention efforts. The Tutorial and Early Alert Programs, along with the library, computer lab, student lounge, and multi-purpose area, serve as an extension to services provided across campus. The Center houses several student organizations that plan activities ranging from guest lecturers, Black History Month events, Welcome Week activities, and carnivals to renown speakers such as Maya Angelou, Tavis Smiley, Cornel West, and Alice Walker.

The new Black Cultural Center opened in June 2002 and is located at 1800 Melrose Avenue. It is a testament to the University’s commitment to the entire student population and is a unique, landmark structure. The University community is encouraged to visit the facility and take advantage of the opportunities provided for all students.

**Career Services**

http://career.utk.edu/

Career Services, located in Dunford Hall, 974-5435, is a university-wide department providing career-related assistance to University of Tennessee students through a wide range of programs and services. Included in the services offered are:

- two annual career fairs providing opportunity to speak informally with representatives from over 100 different companies about their entry-level jobs and hiring practices;
- a nonprofit career fair involving representatives from numerous area nonprofit organizations;
- employer information which includes types of majors sought, job descriptions, career profiles, annual reports and other pertinent information for hundreds of companies that recruit at The University of Tennessee;
- a web site including valuable links to dozens of other career-related web resources;
- a part-time employment service for students seeking such positions;
- and workshops providing instruction in skills and tactics for successful interviewing, resume preparation, business and dining etiquette, and other topics.

On-campus interviews are scheduled during the year and require registration via a web-based resume system. Thousands of interviews are scheduled each year which include approximately 500 companies, government agencies and school systems. Interviews are scheduled by registrants on the web. Many job listings are also available from the department’s web site. Career Services also administers a Credentials Service for doctoral candidates. Setting up a credential file is a simple process involving the submission of a resume and academic transcript, along with letters of recommendation. An alumni placement
service offers job-search assistance. Also, thousands of resumes are referred directly to employers each year to assist students and recent alumni in their job-seeking activities. A web-based resume book is made available to employers.

Career Services registrants have access to video conference interviewing, resume access via the World Wide Web and other state-of-the-art forms of placement assistance.

Center for International Education
http://www.utinternational.org
http://web.utk.edu/~globe/

The Center for International Education (CIE), located at 1620 Melrose Avenue, promotes and supports all aspects of international education and international exchanges at The University of Tennessee, both for American students and faculty and for students and faculty from other countries. CIE coordinates the administration of official linkage agreements between The University of Tennessee and institutions of higher education in other countries.

Programs Abroad: The University of Tennessee strongly encourages students to undertake a semester, summer, or academic year of study outside of the United States. Time spent abroad increases a student’s ability to understand another culture, helps the student better understand his/her own country and its place in the world, and enhances the student’s resume. In addition, students gain confidence as they successfully face the unique challenges of living abroad.

The Programs Abroad Office (PAO) can help students find opportunities that meet their needs. Programs are available in many countries, vary in length from 10-days to a full academic year, and sometimes cost only a little more than it would cost to attend The University of Tennessee. Financial Aid can be used and credits can often transfer back to fulfill University requirements. Advanced planning helps assure that study abroad does not delay graduation.

In addition to formal study abroad, the PAO has information about other types of opportunities for graduate students to enjoy significant international experiences. These include volunteer programs, work-based experiences including teaching English abroad, internships, and experiential learning. Students are encouraged to visit the PAO to learn more about the international opportunities available to them.

International Scholarships: CIE coordinates campus administration of such international grants and scholarships for students as the Fulbright, Rhodes, Marshall, David L. Boren NSEP, W.K. McClure, and provides information about other sources of funding for overseas study and research, including the Rotary Foundation and German Academic Exchange Service (DAAD) grants. CIE also administers The University of Tennessee portion of the University of Bonn’s Transatlantic Summer Academy (TASA) for graduate students and upper-division undergraduates. Within its library on study, work and travel abroad, CIE has information on student summer job programs in seven countries.

International students and scholars: CIE provides information and assistance in matters relating to United States visa issues and U.S. Immigration and Naturalization Service regulations. It produces The Link, an on-line newsletter for The University of Tennessee’s international students and scholars, and administers the insurance policy required of all international students at the University. International student advisors are available to discuss academic and personal concerns. Orientation programs conducted at the beginning of each semester facilitate adjustment to the campus and community and provide essential information related to U.S. laws for international students.

The International House: The “I-House,” 1623 Melrose Avenue, is CIE’s on-campus social, recreational and programming center and serves as a meeting place for international and U.S. students, faculty and staff.

Contacts: Contacts for general inquiries to CIE are cie@utk.edu, phone (865) 974-3177, web site: http://www.utinternational.org. The I-House web address is http://web.utk.edu/~globe and the phone (865) 974-4453.

Dining Services
www.utdining.com

The University of Tennessee Dining Services recognizes that campus dining is a large part of the college experience. Students have the choice of a variety of meal membership options depending on the type of dining desired. Meal memberships are available to all students living on or off campus. Additional information may be obtained from The University of Tennessee Dining Services, 1017 Francis Street #108, Knoxville, Tennessee 37996; (865) 974-4111; or at the above web site.

Disability Services
http://ods.utk.edu

The Office of Disability Services (ODS) is committed to providing equal opportunities for students and employees with disabilities at The University of Tennessee. The primary objective for the office is to eliminate accessibility barriers to provide individuals with disabilities equal access to academic, social, career, cultural and recreational opportunities offered within the University.

To ensure that services are provided in a timely manner, prospective students with disabilities are encouraged to contact ODS at least one month prior to the semester in which they plan to attend. Contact with the students prior to registration enables the ODS staff to better assess the need for interpreters, readers, accessible facilities, and other support services. The T-Access, the university’s new transportation system, is available to transport those individuals with mobility limitations, whether permanent or temporary. Most disabilities require documentation within the past three years from an attending physician or psychologist. However, some disabilities may require more updated documentation. Please contact the office if you have any questions.

Telephone: (865) 974-6087; fax: (865) 974-9552; e-mail: ods@tennessee.edu.

Educational Advancement Program
http://web.utk.edu/~mcnair/eap/

The Educational Advancement Program student support service is a U.S. Department of Education funded TRIO program designed to provide counseling, academic advising, instructional, tutorial, and mentoring services to students with demonstrated academic needs who are also first generation college students, low income, or who have physical disabilities.
The project serves 250 students and provides the following services to those who meet program eligibility criteria after application and interview.

**Counseling:** Trained professionals offer advice and help students develop personal strategies in matters related to financial aid, learning styles, relations with family and friends, adjustment to college, personal and career decision making.

**Academic Advising:** EAP Counselors provide accurate, thorough and personal one-on-one advice about general curriculum and major requirements for majors in every college in the university. Academic review advising is an additional service provided by the counselors.

**Tutoring:** The program employs 35 experienced and knowledgeable undergraduate and graduate students who are trained to provide one-on-one tutoring in a wide range of 100, 200, and 300 level subjects. Students receive 2 to 3 hours of individualized assistance per week. Group tutoring is also available.

**Mentoring:** A series of structured cultural and social events is scheduled for selected EAP students centered around the need to develop networking skills. Citizens of the Knoxville metropolitan community are invited to share with students.

**Instruction:** EAP offers special sections of selected classes with limited class size (25), increased number of class meetings, and empathetic faculty.

- Mathematics 123—Finite Mathematics
- Mathematics 125—Basic Calculus
- Biology 101, 102—Human Kind in a Biotic World
- Chemistry 120, 130—General Chemistry

The Educational Advancement Program office is located at 201 Aconda Court. Phone: (865) 974-7900; fax: (865) 974-7903; e-mail: mcfadden@utk.edu.

**Hearing and Speech Center**
http://www.uthearingandspeech.org/

The Hearing and Speech Center, located at 1600 Peyton Manning Pass, offers complete diagnostic and treatment services to all University students with speech and language disorders/differences and/or hearing disorders. Services are available to any student who has paid the full University Programs and Services Fee or, if taking fewer than nine hours, for any student who has paid the optional student health service fee.

The Center serves as a clinical observation and education facility for students majoring in Speech-Language Pathology or Audiology. It also serves as a community hearing and speech center providing diagnostic and treatment services for persons of all ages exhibiting communication disorders/differences.

For Speech-Language Services: Phone (865) 974-5451; fax (865) 974-4639. For Audiology Services: phone: (865) 974-5453; fax: (865) 974-1792.

**Housing**
http://web.utk.edu/~reshalls/

The University strives to maintain convenient and comfortable residence hall facilities which are available to all single students at a reasonable cost. Many residence halls provide excellent study facilities, including computer rooms, and are all within easy walking distance of classrooms and other university facilities.

On-campus housing provides an atmosphere which is conducive to academic achievement and personal development and it is, therefore, recommended that all students reside in University housing. All freshman students who are not living with a parent or guardian are required to live in University housing. Additional information may be obtained from the Department of University Housing, 405 Student Services Building, The University of Tennessee, Knoxville, Tennessee 37996-0241; (865) 974-2571.

**Office of Information Technology**
http://oit.utk.edu

The Office of Information Technology (OIT) provides computing and telecommunications resources and services for students, faculty, and staff. Information about OIT is available on the OIT web site http://oit.utk.edu.

OIT provides the core information technology equipment and services for The University of Tennessee. OIT provides public-access computer labs, central computing, administrative information systems and network services, as well as information security for The University of Tennessee.

Individual computer accounts are provided at no charge for all University of Tennessee students. These accounts may be used for e-mail, coursework, research, and personal Web pages. Information and on-line registration for computer accounts are available at http://oit.utk.edu/helpdesk/account. Students are also encouraged to download http://antivirus.utk.edu and use AntiVirus software supplied by OIT at no cost to the student.

Students on the Knoxville campus may access the Internet through direct Ethernet, dial-up, or wireless connections. All students can take advantage of The University of Tennessee’s new wireless infrastructure, which is now available in most of the academic and administrative buildings on the Knoxville campus.

To provide access to computing facilities on campus, OIT maintains seven staffed computing labs, several unstaffed labs, and supports computing installations in residence halls. The computing labs are equipped with more than 300 microcomputers including current models of Apple, Dell, and Gateway machines. In addition, laser printers, wireless printers, scanners, CD Writers and zip drives are available. A variety of industry standard software applications are available for use on the machines in the computing laboratories. Please refer to http://oit.utk.edu/labs.html for more information.

**OIT Help Desk:** OIT provides the telephone Help Desk as a centralized source of information and service for the computer and network resources managed by OIT. Help Desk services are available to all University of Tennessee students. To contact the Help Desk, please dial 974-9900 or e-mail helpdesk@utk.edu. For more information, please visit our Help Desk web site at http://oit.utk.edu/helpdesk for more information.

**OIT Customer Service Center:** OIT maintains a Customer Service Center that centrally locates all contact points for walk-in support on related OIT services. Students can receive assistance and/or training on a wide variety of topics at our Customer Service Center. These services include installing academic software free of charge on personally owned computers and helping students diagnose problems with their computers. We will also help clean up virus infected machines and reload/upgrade operating systems. The Customer Service Center is located on the corner of Cumberland and Volunteer in Rooms 103/104 Aconda Court and is open Monday through Friday, 9 a.m. until 4 p.m.
Technology Training: Several courses offered are aimed at improving skills with the technology available at The University of Tennessee. Life Preserver: An Introduction to University of Tennessee Computing is offered several times each semester on supported application software and operating systems. Other courses include those about MS Office products, Dreamweaver, JavaScript, using the Internet and search engines, and Web Page Essentials (four levels of HTML training). There is also a series of courses on Adobe Photoshop. Please refer to http://web.utk.edu/~training for more information.

Computer-Based Training: Computer-Based Training (CBT) is a self-paced series of interactive, WEB delivered, learn-as-you-go courses offered on many computing topics. CBT offers courses for Microsoft products (Word, Excel, etc.), Internet topics (Internet basics, How to create a Web page, etc.), and more advanced topics, such as JavaScript, Visual Basic, object-oriented techniques, and open systems. There are over 500 courses available. This training is free to University of Tennessee students. For registration and access to the CBT courses on the WEB, go to http://oit.utk.edu/cbt/.

Statistical Consulting Center: Our mission is to help University of Tennessee students, faculty, and staff enhance the quality of their research by working together to effectively apply analytical methods, especially statistics. Other areas we support include computing, data file conversion, data mining, graphics, mathematics, scan form test scoring, text analysis, thematic mapping, visualization and web survey design. The costs for most of our services are centrally funded for the first ten hours of assistance each semester. Beyond that individuals or departments are billed. Assistance is available by appointment via the helpdesk at (865) 974-9900, by walk-in at 200 SMC and by email at StatHelp@utk.edu. For details, see http://oit.utk.edu/scc/.

The Innovative Technology Center: The ITC (http://itc.utk.edu) provides the leadership, support, resources, and training necessary to help University of Tennessee faculty, graduate teaching assistants, and academic teaching staff make effective use of technology in their teaching, both online and in the classroom. The ITC offers a wide selection of workshops, supports a resource-rich faculty development lab, awards grants for instructional technology projects, and maintains Online@The University of Tennessee, the university’s Blackboard-powered integrated online academic community.

Parking and Transportation
http://web.utk.edu/~pso/

The University of Tennessee endeavors to provide adequate facilities for vehicles operated by students and staff. However, areas available for parking are necessarily limited. To reduce traffic congestion within the campus area, large parking areas are located on the perimeter of the campus. A comprehensive campus transportation system, called “The T,” connects the Agricultural Campus, residence halls, and The Hill. This service provides direct access to and from the heart of campus. Transportation service is also available to university apartments.

A parking permit is required for parking at all University lots, streets, parking structures, or leased lots. Persons who operate a motor vehicle in connection with attendance or employment at the University must register the vehicle with the Parking Services Office.

A University Traffic and Parking authority determines the parking policy, traffic regulations, and fees. Complete information is published each year in University Traffic and Parking Regulations which is available at the following Parking Services locations: 24 University Center (8:30 a.m.-4:30 p.m., Monday-Friday); 2121 Stephenson Drive (7:30 a.m.-4:30 p.m., Monday-Friday); or at the Parking Information Center at Circle Park. Phone (865) 974-6031, TDD (865) 974-6483 (for the hearing impaired).

Student Counseling Services Center
http://web.utk.edu/~counsel/

The Student Counseling Services Center (SCSC) provides services designed to help students with educational, vocational, personal, and social problems. Professional counselors work with students in a setting that allows for confidential discussion of concerns. Services include: crisis intervention, group therapy, individual therapy, academic classes, consultation with faculty/staff/students, and various workshops and presentations.

To access services, students may come to the center during walk-in hours Monday-Friday from 10:00-11:30 a.m. and 1:00-3:30 p.m. If schedules will not accommodate these times, students can call the Center to schedule an appointment. Anyone experiencing a crisis during the week is seen immediately between 8:00 a.m. and 5:00 p.m. After these hours, students are encouraged to go to The University of Tennessee Medical Center emergency room.

The Center is located at 900 Volunteer Boulevard and can be reached at (865) 974-2196.

Student Health Service
http://web.utk.edu/~kgivens/

Health services provided by the University are available to any student who has paid the health fee (either through paying the full University Programs and Services Fee or, if taking fewer than 9 but at least 3 hours, paying the optional health fee). These out-patient services are available continually throughout every term. The primary clinic at 1818 Andy Holt Avenue maintains scheduled daytime hours Monday through Friday. While urgent-care needs may be handled on a walk-in basis, appointments should be made in most instances.

Health Service will cooperate with students and family physicians in ensuring the continuity of quality health care during the university career.

The State of Tennessee requires that all students born after January 1, 1957 must provide proof of immunization with two doses of Measles, Mumps, and Rubella vaccine for attendance to all universities and colleges. This documentation must be provided to the Student Health Service. In addition, Student Health Service recommends that entering college students assure immunity to Tetanus/Diphtheria, Polio, Hepatitis B, and Chicken Pox. The American College Health Association recommends that students, particularly freshmen living on campus, consider receiving meningitis immunizations.
Student Judicial Affairs
http://web.utk.edu/~homepage/departments/judicial/

The Office of Student Judicial Affairs is concerned with the individual rights and responsibilities of students. Staff members serve as advisors to the student judicial system and, when necessary, initiate appropriate disciplinary proceedings.

Students placed on disciplinary probation receive direction, guidance, support, and encouragement. An effort is made to identify and correct problems interfering with academic progress. While on probation, students may be referred to other agencies for help with personal, psychological, and drug/alcohol problems. The office is located at 409 Student Services Building. Phone: (865) 974-3171.

Student Orientation
http://web.utk.edu/~orient/so.html

The Office of Student Orientation is dedicated to helping new students adjust to the university setting. It concerns itself with general, personal, and scholastic difficulties of the student during their first year of enrollment at The University of Tennessee. The office is responsible for the summer orientation program, specifically designed for the fall term new student, as well as orientation programs for freshmen and transfer students presented prior to the beginning of each term. The office is located in Suite 412 Student Services Building. Phone: (865) 974-2435. e-mail: orient@utk.edu

Undergraduate Academic Services
http://web.utk.edu/~uas/default.html

The purpose of the Office of Undergraduate Academic Services is to educate students about an array of opportunities available to enhance their educational experiences. The office is directly responsible for the administration of First Year Studies, National Student Exchange, and the academic component of the Living-Learning Communities.

Additionally, UAS assists students with academic problem resolution and works with the Undergraduate Council to assist in the administration of appeals for academic dismissals, grade appeals that have gone through the college Dean’s level, and late drop appeals for individual courses.

The Office of Undergraduate Academic Services is located at 812 Volunteer Boulevard, Knoxville, Tennessee 37996-4225. E-mail: uas@utk.edu. Phone (865) 974-3564. Hours: 7:30 a.m.-4:30 p.m. Monday-Friday.

First Year Studies 101 is a freshman seminar designed for students who want to make the most of their college careers. The seminar is offered primarily for students who have not chosen a major and who need assistance in determining their academic and career goals. FYS is an excellent way for students to become part of the University community, to examine personal interests and strengths, and to share ideas and solutions to problems in a small class environment.

National Student Exchange (NSE) provides opportunities for undergraduate students to study for up to one calendar year at another NSE member college or university.

Learning Communities: Students in learning communities live on one floor of a residence hall, have the opportunity to take classes together, participate as a floor in intramurals, and become involved in community events, social activities, and cultural and educational programs. The four communities are: The Volunteer Community, the Honors Community, the Engage Community, and the Architecture and Design Cluster. Each community is unique in both its design and requirements. However, all offer opportunities to connect with other students, to become involved in campus life, and to develop skills necessary to be both a successful student and a successful leader.

Women’s Center

The Women’s Center provides essential informational and referral services to University of Tennessee students and faculty. The library’s specialized collection provides books, journals, and brochures about issues and concerns of women from both a current and historical perspective. Information is available on a variety of topics including racism, violence against women, spirituality, and sex roles. The Women’s Coordinating Council is the programming branch of the Center responsible for educational, social, and cultural events pertaining to women’s issues. The Women’s Center is located in 301 University Center. If you need more information or are interested in volunteering, please call (865) 974-1029.

Writing Center
http://web.utk.edu/~english/writing.htm

The Writing Center offers free, one-to-one assistance to all writers on The University of Tennessee campus. Students, faculty, and staff may drop by at any time to get feedback during every stage of the writing process. The up-to-date facility and trained tutors provide a supportive environment where writers can work and ask questions about their written texts. A variety of reference and writing instruction materials are available for use, as well as computers for those who are working with the Writing Center tutors.

Students enrolled in English 101 or 102 may enroll in English 103 or 104, writing workshop courses that meet two hours per week in the Writing Center, for one hour of credit.

The Writing Center is located in Room 211 of the Humanities and Social Sciences Building. Hours: Monday, Tuesday, Wednesday 9:00-7:30; Thursday 9:00-6:00; Friday 9:00-3:00. Phone: (865) 974-2611. e-mail: writingcenter@utk.edu.
Student Rights and Responsibilities

By registering at the University, the student neither loses the rights nor escapes the duties of a citizen. Enjoying greater opportunities than the average citizen, the University student has greater responsibilities. Each student’s personal life should be conducted in a context of mutual regard for the rights and privileges of others. It is further expected that students will demonstrate respect for the law and for the necessity of orderly conduct in the affairs of the community.

Students are responsible for being fully acquainted with the University catalog, handbook, and other regulations pertaining to students and for complying with them in the interest of an orderly and productive community. The student handbook, Hilltopics, is published and distributed annually and is also available online at the Dean of Students’ web site so that students are aware of the University Standards of Conduct and all disciplinary regulations and procedures. (http://web.utk.edu/~homepage/hilltopics/default.html)

Since conduct and actions will be measured on an adult standard, students should understand that they assume full responsibility for the consequences of their actions and behavior. The academic community will be judged in large measure by the actions of its members. Therefore, it is incumbent upon students to include the implications for their community in their criteria for determining appropriate behavior.

Failure or refusal to comply with the rules and policies established by the University may subject the offender to disciplinary action up to and including permanent dismissal from the University.

Academic Advising at The University of Tennessee

Faculty, administrators, and professional staff on this campus consider advising both a responsibility and an opportunity for improving each student’s pattern of undergraduate education. There are many situations when a student will find informed academic and career advice helpful. The objective of the academic advising system at The University of Tennessee is to help a student at each stage to define the choices that must be made and to give any needed guidance.

At the time of application for admission to The University of Tennessee, each student is asked to indicate whether he/she has already identified a preferred college. Advising centers in each college handle all freshmen and a substantial amount of sophomore advising; major advisors within the college, working closely with the advising center, guide advanced students. At all levels, campus-wide guidelines for good advising are supplemented by specific college standards, guidelines, and evaluations. Prior to advanced registration, during each main term of the academic year (i.e., during Spring and Fall), each student has the obligation to consult an advisor for a substantial conference.

Students who are admitted as University Students and have not yet declared an interest in a specific college are advised by the College of Arts and Sciences Advising Center with assistance of advisors in other colleges and career planning.
New students at The University of Tennessee should review carefully the prescribed curricula of the respective degree-granting units and should choose courses in accordance with their college preference. An advisor assists a student in selecting subjects to ensure a well-balanced education and interprets university and college policies and requirements. However, the student, not the advisor, bears the ultimate responsibility for selecting courses, meeting course prerequisites, and adhering to policies and procedures.

Assistance to students with academic problems or questions is provided by professors, advisors, department heads, and college deans or advising centers. Numerous other sources of academic, career, and personal counseling exist on The University of Tennessee campus and are available to admitted students. These are described in this catalog under “Student Affairs and Academic Services.”

### Degree Audit Report System (DARS)

DARS provides an automated record of a student's academic progress toward degree completion in his/her major.

- DARS was designed for colleges, deans, advisors, and students to use as an advising tool and to check graduation requirements.
- DARS audits for enrolled undergraduate students are available in the advising center and/or the dean’s office of each college. Students can also print their own individual audit in the Office of the University Registrar, 209 Student Services Building.
- Because the system is currently in development, DARS audits are not available for all majors.
- Students should contact their advisor or Advising Office with any questions pertaining to their DARS audit. Final certification of degree requirements rests with the Office of the University Registrar, 209 Student Services Building. Phone (865) 974-2101.

### Class Attendance and Eligibility

Only students who are properly registered for a course may attend it on a regular basis. Any other person in the classroom for special reasons must obtain the consent of the instructor.

It is the prerogative of the individual instructor to set the attendance requirements for a particular class. This means, for example, that an instructor in Freshman English may state in a syllabus how many absences are allowed before a student receives a grade of No Credit.

### First Class Meeting

Students who fail to attend the first class or (laboratory) meeting without prior arrangements with the department concerned may lose their space in class to other students. Students should not assume that they will be officially dropped from the class; it is always the responsibility of the student to drop courses not attended. Otherwise, the student is liable for a grade of “F” in the course and for payment of appropriate fees.

### Honor Statement

All facets of the University community have responsibilities associated with the Honor Statement. These responsibilities are unique to each sector of the University community.

Each student is responsible for his/her own personal integrity in academic life. While there is no affirmative duty to report the academic dishonesty of another, each student, given the dictates of his/her own conscience, may choose to act on any violation of the Honor Statement. Each student is responsible for knowing the terms and conditions of the Honor Statement and may acknowledge his/her adherence to the Honor Statement by writing “Pledged” and signing each graded class assignment and examination.

Students are also responsible for any acts of plagiarism. Plagiarism is using the intellectual property of someone else without giving proper credit. The undocumented use of someone else’s words or ideas in any medium of communication (unless such information is recognized as common knowledge) is a serious offense, subject to disciplinary action that may include failure in a course and/or dismissal from the University.

Specific examples of plagiarism are:

- copying without proper documentation (quotation marks and a citation) written or spoken words, phrases, or sentences from any source;
- summarizing without proper documentation (usually a citation) ideas from another source (unless such information is recognized as common knowledge);
- borrowing facts, statistics, graphs, pictorial representations, or phrases without acknowledging the source (unless such information is recognized as common knowledge);
- collaborating on a graded assignment without instructor’s approval;
- submitting work, either in whole or part, created by a professional service and used without attribution (e.g., paper, speech, bibliography, or photograph).

Faculty members also have responsibilities which are vital to the success of the Honor Statement and the creation of a climate of academic integrity within the University community. Each faculty member is responsible for defining, in specific terms, guidelines for preserving academic integrity in a course. Included in this definition should be a discussion of the Honor Statement. Faculty members at their discretion may also encourage their students to acknowledge adherence to the Honor Statement by “pledging” all graded class assignments and exams. The form of pledge may include writing the honor statement on the assignment, signing the printed statement, or simply writing “Pledged.” Additionally, it will be the responsibility of each faculty member, graduate teaching assistant, and staff member to act on any violation of the Honor Statement. It is also incumbent upon faculty to maintain an atmosphere conducive to academic integrity by insuring that each quiz, test, and exam is adequately proctored.

### The Statement

An essential feature of The University of Tennessee is a commitment to maintaining an atmosphere of intellectual integrity and academic honesty. As a student of the University, I pledge that I will neither knowingly give nor receive any inappropriate assistance in academic work, thus affirming my own personal commitment to honor and integrity.
Grade Appeal Procedure

Appeals to the Undergraduate Council

The Undergraduate Council hears appeals concerning grades only after grievances have been duly processed, without resolution, through appropriate procedures at the department and college levels. The Council does not review grievances concerning allegations of misconduct or academic dishonesty. Procedures for consideration of such matters are published in *Hilltopics* under “Student Rights and Responsibilities.”

In the appeals process, the Undergraduate Council has authority to deny the appeal, grant the appeal and request the instructor change the grade, or assign a grade of “pass” for the course.

Students should begin the appeal process as soon as possible. No appeal may be filed later than 90 days after the final grade has been issued.

Composition of the Appeals Committee

Members of the Appeals Committee are appointed by the chairperson of the Undergraduate Council. The committee consists of at least five members, one of whom is named chairperson.

Grounds for Appeal

Students may appeal grades on the basis of one or more of four allowable grounds:

- A clearly unfair decision (such as lack of consideration of circumstances clearly beyond the control of the student, e.g., a death in the family, illness or accident);
- Unacceptable instruction/evaluation procedures (such as deviation from stated policies on grading criteria, incompletes, late paper, examinations, or class attendance);
- Inability of instructor to deal with course responsibilities; or
- An exam setting which makes concentration extremely difficult.

The Appeals Procedure

- The student should first consult with the instructor and if agreement cannot be reached, the student may appeal to the department head. If the student believes the grade assignment was based on criteria other than academic, such as race, gender, religious beliefs, national origin, age or handicap, then the student should make an appeal in writing to the Office of Equity and Diversity with a copy to the department head.
- If the student appeals to the department head after attempts to resolve the matter with the instructor have failed, it is the responsibility of the department head to determine the circumstances surrounding the assignment of the grade. If the department head has reason to believe that none of the four academic conditions specified above apply, then the department head should encourage the student to accept the assigned grade. If the department head has reason to believe that any of the four conditions do apply, then instructor should be encouraged by the department head to reconsider the grade. If the instructor elects not to change the grade, then the department head will appoint a committee of at least three faculty members to review the matter. Such committee will be charged with making a timely recommendation to the department head concerning the student’s grade. The student must submit a written appeal for the committee’s consideration or for any appeal made beyond the departmental level. When the departmental committee procedure is used, if the committee’s recommendation is that the student’s grade should be higher than the one assigned and the instructor still elects not to assign the recommended higher grade, the department head will assign the grade of “pass,” or, at the student’s option, he/she may accept the existing grade. In such a case, all other restrictions to use of the grade to satisfy graduation requirements are waived.
- If the student wishes to pursue the appeal further, he or she may appeal in writing to the dean of the college in which the department is located.

If the issue is still unresolved, the student may initiate the formal Undergraduate Council appeals procedure.

- The student may forward to the Director of Undergraduate Academic Services and Chair of the Undergraduate Council a statement requesting a review of the student’s complaint concerning his or her grade. The appeal must be written and must be based upon one or more of the four allowable grounds, explaining in detail why the appeal is based upon these grounds. No appeals will be accepted via fax or e-mail. The appeal must be sent via mail or hand delivered and include a signature. Appeals can be mailed to: Undergraduate Academic Services, Attention Appeals Committee; 812 Volunteer Boulevard, Room 200; Knoxville, Tennessee 37996-4225.
- The Director of Undergraduate Academic Services, after consulting with the student and the college office to determine that the appeal does in fact fall under the jurisdiction of the Undergraduate Council and has been brought forward in the proper form, will, first, forward the appeal to the Appeals Committee of the Undergraduate Council for review and, second, notify the Dean, the Department Head, the course instructor, and the student that the Appeals Committee has the case under review.
- Upon receipt of the appeal, the chairperson of the Appeals Committee will call a special meeting of the committee for purposes of hearing the appeal. The chair will invite the student, the instructor, and the department head to appear in person if they choose or to supply a written statement (in the student’s case this statement will already have been provided). The committee will maintain a recording of the hearing.
- After hearing the appeal, the Appeals Committee will vote as to whether the grade should be overturned. A majority vote will constitute the decision of the committee. A tie vote will be decided by the chair.
- The decision of the Appeals Committee will be relayed by the chair of the Committee in writing to the principals.
- If the appeal has been denied by the Appeals Committee, the student may appeal to the full Undergraduate Council. If the Council denies the appeal, the grade stands.
- If the student’s appeal is upheld by the Appeals Committee, the instructor may appeal to the full Undergraduate Council. If the Council upholds the instructor, the grade stands.
• If the student’s appeal is upheld by the Appeals Committee and there is no appeal by the instructor to the full Undergraduate Council, or if the instructor does appeal to the full Undergraduate Council and the Council holds for the student, the instructor may either elect to change the grade to a higher grade or refuse to do so.

• If the instructor refuses to change the grade, the Provost will instruct the University Registrar to change the course grade to “Pass.”

• In all cases of appeal to the full Undergraduate Council, the chairperson of the Undergraduate Council will notify the student or instructor, in writing, of the Council’s decision and if applicable, of the right to further appeal in accordance with Article 5, Section 7, of the University Bylaws:

• Officers, faculty and staff members, students, and employees, alumni, and all other officers who feel that they may have a grievance against the University shall have the right of appeal through the Provost or Vice-President to the President of the University.

An appeal to the Provost must be filed within 60 days of the Undergraduate Council decision.

Special State and Federal Laws for Educational Purposes

American History

Effective July 1, 1978 and afterwards, all students receiving a bachelor’s degree must have completed one unit of American history on the high school level or six semester hours of collegiate American history as required by the General Assembly of the State of Tennessee (Tennessee Code Annotated Section 493253).

Family Education Rights and Privacy Act (FERPA)

This act provides for confidentiality of student records; however, it also provides for basic identification of people at The University of Tennessee without the consent of the individual. Release of information to third parties includes directory information, such as contained in the campus telephone book and sports brochures. This information includes name, address, telephone number, date and place of birth, classification, college, major, dates of attendance, degrees and awards, the most recent previous educational agency or institution attended, participation in school activities and sports, and weight and height (for special activities).

Public notice of the categories to be contained in a directory is given, and a period of one week is provided during which a student may request that such information not be released.

For additional information, see: http://web.utk.edu/~registra/privacy.html.

Social Security Number Use

The University of Tennessee requires assignment of an individual student number for internal identification of each student’s record. The University began using the social security number as the student identification number prior to January 1, 1975; therefore, the federal law allows continued use of this number. However, if a student does not desire the social security number to be used, notification to the University must be made at the time of application for admission; a student identification number will be assigned instead. For prompt and accurate retrieval of records and for conducting business about their own records, students and alumni must give their student identification number. Student identification numbers, whether a social security number or an assigned number, are used administratively within the University only and are not given to third parties without expressed consent of the student concerned.

Other Requirements

Program Assessment and Improvement Through Student Evaluation

In order for the University to assess and improve its academic programs, periodic measurements of student perceptions and intellectual growth must be obtained. As a requirement for graduation, students shall participate in one or more evaluative procedures, which may include examinations in general education and/or the major field of study. The evaluative information obtained through testing is used solely to improve the quality of the educational experience for future generations of students.

Senior General Education Test

The Tennessee Higher Education Commission requires that each public institution for higher learning evaluate the general education skills of the senior class. Each year a percentage of the seniors are selected to take the test. The test results enable The University of Tennessee to evaluate the University’s general education program and to qualify for needed funding from the state. Students are informed in their senior year if they have been selected to take the test.

Advanced Military Service and Air Force Aerospace Studies Commission

Students who elect to enroll in advanced military courses (junior and senior years) are obligated by written agreement with the government to complete the courses and to accept a commission if tendered.

Special Requirements for Student Athletes

Student athletes participating in intercollegiate sports under the provisions of the National Collegiate Athletic Association and the Southeastern Conference must fulfill the NCAA academic progress requirements in addition to the University’s academic continuation and retention policies for continuation of eligibility to participate in intercollegiate sports.

Teacher Licensure

Teacher licensure is a responsibility of the College of Education, Health, and Human Sciences. University of Tennessee students desiring certification must meet general education, professional education, and area of specialization requirements described in the College of Education, Health, and Human Sciences section of this catalog.
Opportunities for High-Achieving Students

Advanced Placement Examinations

Freshmen admitted to The University of Tennessee may receive credit on the basis of performance on one or more of the Advanced Placement Examinations offered each May by the College Entrance Examination Board in 16 subject areas. The tests are usually taken by high school students during their junior or senior year.

Departments at The University of Tennessee which grant advanced placement credit for satisfactory test scores include Biology, Chemistry, Computer Science, Economics, English, French, German, History, Latin, Mathematics, Music, Physics, Political Science, Psychology, Spanish and Statistics. The CEEB sends scores and test books on request to the Director of Admissions at The University of Tennessee in June or July. Each participating department decides the acceptable score for credit. Information can be obtained from the Admissions Office or from the Arts and Sciences Advising Center.

CLEP Credit

When approved by a given department, nationally recognized examinations, such as the examinations of the College Level Examinations Program (CLEP) of the College Entrance Examination Board, may be used as proficiency examinations in one or more courses offered by that department. The final decisions, as to specific courses for which such examinations are to be taken as evidence of acceptable proficiency, and as to the minimum score required for credit to be given, rest with the department.

The CLEP examinations may be taken at the State Testing and Evaluation Center. The Center supplies information on test dates, procedures, and current departmental policies concerning the acceptance of CLEP credit.

Honors Courses

Courses specifically designated as Honors courses are available, but not exclusive to those students enrolled in the University Honors Program. Students selected on the basis of ACT/SAT scores and previous academic performance may also enroll.

- There is no limit to the number of credits that may be earned in these courses except in the senior readings courses not requiring regular class attendance.
- These courses may not total more than six credit hours toward graduation. In the fields of science that offer four credit hour courses, the total may be eight semester hours.

Letters are sent to entering freshmen who qualify for non-departmental honors courses. Students other than freshmen should consult the Director of Honors Program [F101 Melrose Hall; (865) 974-7875; honors@utk.edu] or individual programs.

Seniors Eligible for Graduate Credit

Subject to approval by the Dean of Graduate Studies, a senior at The University of Tennessee Knoxville who needs fewer than 30 semester hours to complete requirements for a bachelor’s degree and has at least a B average (3.0) may enroll in graduate courses for graduate credit, provided the combined total of undergraduate and graduate coursework does not exceed 15 credit hours per semester.

- Senior Privilege is extended only to students working toward a first bachelor’s degree.
- Students who have met all requirements for graduation are not eligible for senior privilege.
- Approval must be obtained each semester at the Office of Graduate Student Services, P-105 Andy Holt Tower; (865) 974-2475; http://web.utk.edu/~gsinfo/.
- A maximum of 9 hours of graduate credit at the 400- and 500-level can be obtained in this status.
- Some departments do not permit seniors to register for graduate courses without prior permission.
- Courses taken for graduate credit may not be used toward both the baccalaureate and a graduate degree.

Dean’s List

A public announcement is made of students passing a semester’s work Summa cum laude (3.80 through 4.00), Magna cum laude (3.65 through 3.79), and Cum laude (3.50 through 3.64). To be eligible, students must complete at least 12 hours, not counting work taken on a Satisfactory/No Credit basis.

General Regulations

Classification

Undergraduate students are classified according to the following chart, on the basis of semester hours passed.

To be considered a full-time undergraduate student in any semester, a student must be enrolled in 12 semester hours, including the full summer term. Six hours for each separate term of the summer session are required for full-time classification. Audit hours are not considered in the computation.

CLASSIFICATION OF UNDERGRADUATE STUDENTS

<table>
<thead>
<tr>
<th>Year</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>First</td>
<td>0-29.9</td>
</tr>
<tr>
<td>Second</td>
<td>30-59.9</td>
</tr>
<tr>
<td>Third</td>
<td>60-89.9</td>
</tr>
<tr>
<td>Fourth</td>
<td>90-up</td>
</tr>
<tr>
<td>Fifth</td>
<td>120-up</td>
</tr>
</tbody>
</table>

Course Numbers and Levels

Each course offered by the University is identified by the name of the academic discipline and a three-digit course number. These numbers indicate course level, as follows:

<table>
<thead>
<tr>
<th>Course Numbers</th>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>000-099</td>
<td>Noncredit; preparatory.</td>
</tr>
<tr>
<td>100-299</td>
<td>Lower division; primarily for freshmen and sophomores.</td>
</tr>
<tr>
<td>300-499</td>
<td>Upper division primarily for juniors and seniors; when taken for graduate credit, the letter “G” will precede the course credit hours on the grade report.</td>
</tr>
<tr>
<td>500-599</td>
<td>Graduate; sometimes available for undergraduate credit; when taken for undergraduate credit, the letter “U” will precede the course credit hours on the grade report.</td>
</tr>
</tbody>
</table>
Correspondence Work

An undergraduate student may take by correspondence as many as one-fourth of the total hours required for the degree sought and have this work count toward the degree.

- Credit for undergraduate courses in correspondence in the major subjects shall be limited to one-fourth of the total credit hours required.\(^1\)

- All courses taken by correspondence for which degree credit is given must meet degree program requirements of the University. In addition, all currently enrolled students who intend to take correspondence courses must have the approval of the dean of the college in which they are enrolled prior to registering for any college credit correspondence course.

- Degree credit will not be granted for correspondence courses taken at an institution other than The University of Tennessee by a University of Tennessee student if an equivalent correspondence course is available from The University of Tennessee Department of Distance Education and Independent Study.

- Correspondence courses are open to students who have been dropped from the University for academic reasons only with the prior permission of the dean of the college or school in which they were enrolled.

- A senior may take only six hours of the last year’s work (the last 30 semester hours) by correspondence, and this must be taken from The University of Tennessee. If the student is a senior transfer, no work may be taken by correspondence.

- Students taking work for Teacher Certification purposes should consult the State Department of Education of their respective states concerning the amount of correspondence credit allowed for Teacher Certification.

- Correspondence credits are not accepted for students enrolled in the College of Law, or except by prior permission, for students in the Center for Health Sciences.

Petitioning Process

The University offers a petitioning procedure through which students can occasionally gain exceptions to the general rules included in this catalog.

- It is the direct responsibility of the student who seeks to deviate from the rules to complete the petitioning process.

- In cases where this might affect the student’s eligibility to enroll in a particular course, the student should begin the petitioning process during the previous term and must gain final approval for the petition no later than the add deadline of the term involved.

The steps involved in this process are as follows:

- The student completes the petition with the assistance of his/her advisor and obtains the signatures of the advisor and department head or curricular chair.

- The department sends the petition to the college’s advising center or dean’s office for consideration.

- If the petition is approved, it is entered into DARS (Degree Audit Report System) and sent to the Office of the University Registrar to be noted when checking for graduation requirements.

Minimum Class Size

An undergraduate course will not normally be given for fewer than fifteen students at the lower division; twelve at the upper division; and nine at the graduate level except by permission of the Provost. The University reserves the right to cancel, postpone, or combine classes when necessary.

University Students

Many students are undecided about their major when they enter The University of Tennessee. All undecided students are designated University Students and are advised by Arts and Sciences Advising Services. While it is proper to explore alternative choices, students should also pursue a course of study that culminates in graduation. For this reason, there is a limit to the length of time students may remain as University Students.

- At the completion of 45 hours, University Students who have entered The University of Tennessee as freshmen must associate with a college or officially declare a major prior to the end of the next term of enrollment.

- Students who transfer from another college or university may enroll as University Students. However, transfer students may remain as University Students no longer than through the completion of 15 semester hours if the total number of hours transferred is 30 or more.

- University of Tennessee students who fail to progress in a given major, college, or school and are undecided about an alternative course of study may continue at The University of Tennessee as University Students for a maximum of 15 semester hours.

Writing Competence

The faculty of all colleges expect students to communicate effectively in standard written English in laboratory reports, examinations, essays, and other written assignments.

If a student cannot fulfill the requirements for a course because of an inability to communicate in writing, the instructor will give the student an “IW” to designate “incomplete due to writing.” Any student who receives an “IW” should contact the Writing Center Director (211 Humanities and Social Sciences Building).

- The instructor of the course determines the appropriate requirement for remediation and sends any student work requiring revision to the Writing Center director.

- The Writing Center director determines when the requirement has been fulfilled. Upon the Writing Center director’s recommendation, the student’s work is returned to the instructor, who will change the student’s grade accordingly.

- As with other incompletes, the student will have one calendar year to make up the deficiency before the grade automatically changes to reflect failure for the course.
Grades, Credit Hours, and Grade Point Average

- The basic unit of credit at The University of Tennessee is the semester hour. This normally represents one hour of lecture or recitation or two hours of laboratory work per week.
- Each course at the University carries a number of credit hours specified in the course description.
- At the completion of each course, a student will be assigned a grade reflecting the student’s performance in the course.
- Passing grades carry a certain number of quality points per credit hour in the course.
- A student’s grade point average is obtained by dividing the number of quality points the student has accumulated at The University of Tennessee by the number of hours the student has attempted at The University of Tennessee, not including hours for which grades of I, N, NC, NR, P, S, W, and WP have been received.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Performance Level</th>
<th>Quality Points Per Semester Hour of Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Superior</td>
<td>4.0</td>
</tr>
<tr>
<td>B+</td>
<td>Very Good</td>
<td>3.5</td>
</tr>
<tr>
<td>B</td>
<td>Good</td>
<td>3.0</td>
</tr>
<tr>
<td>C+</td>
<td>Fair</td>
<td>2.5</td>
</tr>
<tr>
<td>C</td>
<td>Satisfactory</td>
<td>2.0</td>
</tr>
<tr>
<td>D</td>
<td>Unsatisfactory</td>
<td>1.0</td>
</tr>
<tr>
<td>F</td>
<td>Failure</td>
<td>0.0</td>
</tr>
<tr>
<td>WF</td>
<td>Withdrawn Failing</td>
<td>0.0</td>
</tr>
</tbody>
</table>

Note: WP carries no quality points or credit hours.

Freshman English

English 101, 102, 118, 121, 131, and 132 are offered on a system of A, B+, B, C+, C, I, NC, W grading. All entering freshman, except international students, must enroll in English 101, 102 or 118.

Grade of Incomplete

Under extraordinary circumstances and at the discretion of the instructor, the grade of “I (Incomplete) may be awarded to students who have satisfactorily completed a substantial portion of the course but cannot complete the course for reasons beyond their control.

- The “I” grade is not issued in lieu of the grade “F” or “FX.”
- The terms for removal of the “I,” including the time limit for removal of the “I,” is decided by the instructor.
- It is the responsibility of the student receiving an “I” to arrange with the instructor whatever action is needed to remove the grade at the earliest possible date, and in any event, within one calendar year of the assignment of Incomplete.
- Students may not remove an “I” grade by re-enrolling in the course.
- The “I” grade does not carry quality points and is not computed as a grade of “F” in the grade point average.
- If the “I” grade is not removed within one calendar year or upon graduation, it shall be changed to an “F” and count as a failure in the computation of the grade point average.
- A student need not be enrolled at the University to remove a grade of incomplete.
- In addition, a grade of “IW” may be assigned if a student cannot fulfill the requirements for a course because of inability to communicate in writing. (See Writing Competence for more information about the “IW” grade.)

Grades That Do Not Influence Grade Point Average

The following grades carry no quality points and hours for which these grades are earned are not counted in computing a student’s grade point average.

- NC (No Credit) indicates failure to complete a course satisfactorily when taken on an S/NC basis.
- S (Satisfactory) is assigned for C or better work when a course is taken on an S/NC grading basis.
- W (Withdrawal) is assigned in courses when a student has officially withdrawn from the University. W is also assigned in courses when a student withdraws from a course between the eleventh and forty-first calendar day of classes. Regulations concerning withdrawal from courses or from the University appear in a following section of this catalog, entitled “Changes in Registration.”
- WP (Withdrawn Passing) is assigned in courses when a student withdraws from a course after the forty-second calendar day of classes and is passing the course at the time of withdrawal.

Satisfactory/No Credit Grading System

The purpose of this system is to encourage the student to venture beyond the limits of those courses in which the student usually does well and, motivated by intellectual curiosity, explore subject matter in which performance may be somewhat less outstanding than work in other subjects. To this end, Satisfactory/No Credit (S/NC) grading has been developed for undergraduate courses (100-, 200-, 300-, and 400-level courses).

- Neither grade is counted in a student’s grade point average, but, like all other grades, is entered on the permanent record.
- S is given for C or better work on the traditional grading scale and NC is given for less than C work.
- The student only receives credit in the course if an S is received.
- A student may not repeat a course for S/NC if the student received a conventional grade (A, B+, B, C+, C, D, F).
- The instructor of a conventionally graded course will not be informed which student, if any, has elected S/NC grading.
- If the student elects non-conventional grading, grades of A, B+, B, C+, C will be recorded on the student’s permanent academic record as S, and D or F as NC.
- The grade of I for incomplete work will be recorded as an SI, which will not be computed in the average.
- A student is permitted to change the system of grading in a course through the add deadline.
- The changing of an S/NC grade to a conventional letter grade or vice versa is not permitted unless an error is determined by the Office of the University Registrar.
Repeating Courses

- For the first three repeated lower-division courses (100-200 level), only the last grade earned in the repeated courses will be counted in computing the grade point average. If the same course is repeated more than once, the additional repeats count as part of the repeat total.
- For all courses repeated after the first three, all grades will be included when computing the grade point average.
- All grades for all courses remain on the transcript.
- Unless it is otherwise specified in the course description, no course may be repeated more than twice.
- No course may be repeated in which a grade of C or better has already been earned.
- Exceptions to the number of times a course may be repeated will be allowed only with prior written permission of the student’s college dean.
- Each course is counted only once in determining credit hours presented for graduation.

Enrollment

Maximum Hours Per Term

Undergraduate students may enroll for a maximum of 19 credit hours each semester. Enrollment in more than 19 hours must be approved by the dean of the student’s college or school.

Undergraduate students may enroll for a maximum of 6 credit hours for each of the first and second sessions. Students may enroll for a maximum of 12 credit hours for those courses that extend through the entire session. Students may enroll for a maximum of 12 credit hours in any combination of summer session courses. Enrollment that exceeds the maximum must be approved by the dean of the student’s college.

Auditing Courses

Students may enter classes as auditors with the consent of the instructor. The instructor will determine the appropriate requirements or restrictions.
- Auditors receive no credit and the audited course will not be recorded on the transcript.
- The student’s name will appear on the class roll to inform the instructor that the student is properly enrolled as auditor.
- Auditors are required to register and pay fees.
- Prior to the add deadline, a change from credit to audit or from audit to credit may be made by completing the change of credit portion of the Change of Registration Form and having it processed in 209 Student Services Building.
- After the add deadline, the signature of the dean or designee is needed in order to change credit. Once the drop deadline is passed, a change will not be allowed.

Prerequisite and Corequisite Courses

Students must meet prerequisite and corequisite requirements for all courses with such restrictions, and no student shall be permitted to register for those courses in which the requirements have not been met.

Changes in Registration

Undergraduate students may add courses through the tenth calendar day counted from the beginning of classes. Because of the nature of some courses, permission of the department head may be required to add a course after classes begin. Students may also, as departmental policies permit, change a section of a course through the add deadline.
- Students may drop courses until the 10th calendar day from the start of classes with no notation on the academic record.
- From the 11th calendar day until the 42nd calendar day, students may drop courses which will receive the notation of “W” (Withdrawn).
- The “W” grade is not computed in the grade point average.
- Courses may be dropped on the web (www.cpo.utk.edu) or through the telephone registration system.
- After the 42nd calendar day and to the 84th day of classes, courses may be dropped and will be assigned a “WP” (Withdrawn Passing) or a “WF” (Withdrawn Failing).
- Instructor’s signature is required. The form, once signed, should be taken to the Office of the University Registrar for processing.
- The “WF” is calculated in the grade point average as an F.
- After the 84th day, no drops are permitted.
- The exceptions to the add and drop deadlines are summer and other special sessions. Students should consult the summer term timetable for the appropriate deadlines.
- Failure to attend a course is not an official withdrawal and will result in the assignment of an F grade.

Withdrawing from the University

Undergraduate students who need to leave the University before a term is finished must apply for withdrawal in the Office of the University Registrar, 209 Student Services Building. Information on dropping a single course is provided in the section entitled “Changes in Registration.”
- Requests for withdrawal are routinely approved when the student applies by the deadline listed on the web (www.cpo.utk.edu) or in the Timetable of Classes.
- The word “withdrawn” will be posted on the transcript.
- It is the responsibility of a student who has registered for classes to attend them or, if that is impossible, to apply for withdrawal.
- A student will receive final grades unless the student follows procedures for withdrawal from the University.
- A student who simply stops participating in classes, or fails to attend class, without officially withdrawing will be assigned the grade of “F” in each course.
- Students who do officially withdraw must apply for readmission in advance of their next term of anticipated enrollment, except for withdrawal from summer term.
- Enrolled students are liable for payment of fees. Any refunds that may be due upon a student’s withdrawal are issued by Office of the Bursar, 211 Student Services Building.
Undergraduate Retention Standards

Academic Review

The University of Tennessee expects all students who enter to remain in good academic standing. To accomplish this, the University has established retention standards. To graduate from The University of Tennessee, a student must earn a minimum cumulative GPA of 2.00. The catalog contains additional retention, progression, and graduation requirements for specific programs.

A student will be placed on Academic Review when either his/her cumulative grade point average falls below the minimum acceptable level of 2.00 for one semester, or when his/her semester grade point average falls below the minimum acceptable level of 2.00 for two consecutive semesters regardless of his/her cumulative GPA.

• During that semester, and any other semesters in review, a student must participate in a special advising program in his or her college.

• If, while in review, a student does not maintain a 2.00 grade point average for hours attempted each term, the student may be released from his or her college or be released and dismissed from the University.

• A student released from his or her college with a cumulative grade point average of 2.00 or higher may seek admission to an alternate college and major.

• A student with a grade point average below 2.00 who is released from the college but not dismissed from the University is classified as a University Student and is advised in the College of Arts and Sciences.

• A student dismissed from the University may apply for readmission to the University after a minimum of one calendar year away from the University. Readmission is not automatic.

• A student who has been in “academic review” status returns to “good standing” when, at the end of the term, the cumulative grade point average is 2.0 or higher and the term grade point average is 2.0 or higher.

Academic Second Opportunity

Academic Second Opportunity is designed to assist the student who was not successful in progressing toward a degree during a previous attendance at The University of Tennessee but is now performing satisfactory work. Granting it is an acknowledgment by the University that the student’s earlier work is not consistent with his or her academic potential but that the work earned since return is. This policy is not intended to allow students to progress directly into a major. Exceptions to progression standards must be made at the college level.

An undergraduate student may petition for Academic Second Opportunity upon meeting the following requirements:

• The student has re-enrolled following an absence from The University of Tennessee of at least three full calendar years.

• The student’s previous academic record at the University was unsatisfactory (normally, below a C average).

• Since readmission, the student has completed 15 or more graded hours (correspondence coursework may not be included in the 15 hours), earning a 2.5 GPA or above.

Decisions on granting Academic Second Opportunity are made by committee. If the student’s petition is approved, all previous academic work will remain on the permanent record, but the grades for such work will not be used in computing the grade point average or in determining academic standing. Previous credits earned with a grade of C or better will continue to meet major, distribution, and graduation requirements.

To graduate, a student granted Academic Second Opportunity must complete at least 30 hours at The University of Tennessee following readmission.

• To meet minimum qualifications for graduation with honors, the student must earn at least 60 semester hours of letter grades (A-F) following readmission.

• Academic Second Opportunity may be granted only once. If hours earned during the previous attendance have already been applied toward the completion of an awarded degree from a four-year institution, Academic Second Opportunity will not be granted.

• Registration at another college or university since the previous University of Tennessee enrollment will not prevent a student from qualifying.

Petition must be made no later than the academic term prior to the one when the degree will be granted. Students should consult the Office of the University Registrar’s website (http://web.utk.edu/~registra) or contact their college for deadlines for specific terms. To initiate the petitioning process, students should meet with designated advisors in their colleges.

Exams

Proficiency Examination

A proficiency examination may be given in any academic course offered for undergraduate credit. University policy is to reserve to departments the decisions as to which courses, if any, can be passed by proficiency examinations.

• Proficiency examination credit is available only for University of Tennessee students.

• When applying to a department for a proficiency examination, a student should present evidence of having developed the abilities, knowledge, and attitudes expected of those who have taken the course in question.

• The giving of the examination must be approved by the head of the department in which the course is offered.

• A fee must be paid in advance at the Bursar’s Office.

• Subject to the grading policy of the college in which the student is enrolled, and except for courses which are graded only on as S/NC basis, a student who passes a proficiency examination and who wishes to have the grade recorded may choose to take the grade on the examination (A, B+, B, C+ or C) or take an S. An S gives credit for the course but does not affect the grade point average. If a grade of D or F is made on a proficiency examination, the department is expected to note the attempt but no record of the examination is made on the student’s transcript.

• The maximum credits obtainable through proficiency examination and the use of proficiency examinations to remove failing grades (also the grade of I) are determined by the department offering the proficiency examination.
Entering international students whose native language is not English are required to take The University of Tennessee English Proficiency Examination to determine placement in the appropriate English course. No credit for any English course is awarded through this special examination.

Final Exams
Final exams must be given during the final exam period at the scheduled time, although alternative uses of the scheduled exam period may be designated by the instructor.

- Students are not required to take more than two exams on any day.
- The instructor of the last non-departmental exam (see Glossary) on that day must reschedule the student’s exam during the final exam period.
- It is the obligation of students with such conflicts to make appropriate arrangements with the instructor at least two weeks prior to the end of classes.
- No in-class, written quizzes or tests counting more than 10% of the semester grade may be given the last five calendar days prior to the study period.

General Requirements for a Bachelor’s Degree
To receive a bachelor’s degree from The University of Tennessee, a student must complete all of the requirements listed below. Some colleges within the University have special requirements above and beyond those stated here. Students are advised to consult the appropriate section of this catalog for any further degree requirements. Each program presented by the candidate for a bachelor’s degree is reviewed and approved for meeting the degree requirements by the Office of the University Registrar.

- Complete satisfactorily all requirements of the curriculum for which the student is enrolled, as described in the portion of this catalog devoted to the college or school offering the curriculum. Curriculum requirements change frequently, and students should note the caution on the second page of this catalog. A student is allowed to satisfy requirements for a bachelor’s degree under any curriculum in effect during the student’s attendance at The University of Tennessee provided the curriculum has been in effect within six years of the date of graduation. This does not obligate the University to offer a discontinued course. Programs may be adjusted by the student’s faculty advisor and college dean in consultation with the Office of the University Registrar.

- Achieve a grade point average of at least 2.00 on all work attempted at The University of Tennessee. (Students bringing transfer work to The University of Tennessee before Fall 1985 must also have a combined average of at least 2.0 on all University of Tennessee work and the work transferred in and posted before Fall, 1985.)
- Complete 60 hours of credit offered for the bachelor’s degree at an accredited senior college.
- Complete the last 30 hours of credit offered for the bachelor’s degree in residence at The University of Tennessee. Credit for correspondence courses taught by the faculty of the Knoxville campus may be counted as part of this requirement with the exception of the limitation noted in the regulations concerning correspondence work. 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 dean of the student’s major college and the University Registrar.
- Comply with the state law that one unit of American history at the high school level or six semester hours of collegiate work be satisfactorily completed. This requirement is effective for those graduating July 1, 1978 and thereafter. It may be satisfied by completing History 221-222 (or 227-228). History 449 may be used in lieu of three hours of American History. Students should consult the catalog of enrollment to determine how the six hour’s credit for fulfillment of this requirement is to be included in individual curricula.
- Hours completed at the university level to remove high school deficiencies may be used to meet specific curricular requirements. However, hours earned in these courses will not count toward the total hours required for graduation, effectively adding to the total number required for graduation.
- Satisfy all financial obligations (fees or fines) owed to the University.
- File an application for a degree with the Office of the University Registrar, Room 209 Student Services Building. Application deadlines are printed in the Timetable of Classes or web (http://web.utk.edu/~Registrar) for each term. This deadline is imperative in order that all necessary processing can take place toward the degree.
- Comply with the Tennessee Higher Education Commission requirements to complete General Education Comprehensive Tests in the Major.
- Students who wish to participate in their graduating class Commencement Ceremony will need to place a Cap and Gown order with the University Center Book and Supply Store. Orders placed after the deadline date established by the Book and Supply Store will be subject to a late fee.

Second Majors and Minors
Students may pursue any available minors or second majors. Second minors and majors will be noted on student’s transcripts upon graduation. Meeting the requirements of minors or second majors may lengthen students’ academic programs.

Second Bachelor’s Degree
A student who holds a bachelor’s degree may receive a second bachelor’s degree from The University of Tennessee by satisfying the following:

- Meet all requirements of both degrees
- Complete at least 30 semester hours in addition to the total hours required for the first bachelor’s degree.
- Declare the intention to work for a second bachelor’s degree with the Office of the University Registrar.
Graduating Senior Privilege

A senior who fails one subject during the semester of intended graduation may, with approval, take an examination or other appropriate form of evaluation. The senior must receive the approval of the instructor and appropriate collegiate personnel which may include the department head and/or dean. The evaluation may take place at the beginning of or during the next semester and, if successful, the senior will receive the degree at the next commencement.

Honors Categories for Graduation

Honors are conferred upon graduating students who have displayed a high level of achievement during their university career. Recipients of honors receive their degrees with:

- **Cum laude** 3.50 through 3.64
- **Magna cum laude** 3.65 through 3.79
- **Summa cum laude** 3.80 through 4.00

- These honors categories are based on a student’s cumulative average at the end of the semester preceding the graduation semester.
- For all students entering Fall, 1985, and thereafter, honors categories are based only on the average earned at The University of Tennessee. Students must have earned at least 60 hours at The University of Tennessee in order to qualify for honors categories. For those students who entered prior to Fall, 1985, the honors category is based on the average earned at The University of Tennessee and the transfer work brought in prior to that date, or the average earned at The University of Tennessee, with the lower of the two averages determining the honors category. Work transferred after Fall, 1985 is not used in computation of the GPA.
- If, at graduation, a student’s grade point average would allow a higher honors category than that determined at the end of the semester preceding the graduation semester, the student may, upon written request, receive a substitute diploma indicating the higher category.
- Courses may not be repeated for the purpose of raising an honors category.
- University Honors are conferred upon graduating students who have completed the University Honors Program.
The College of Agricultural Sciences and Natural Resources (CASNR) dates back to 1869 when the University was designated as Tennessee’s Federal Land-Grant Institution. Under terms of the Federal Land-Grant Act, the University was enabled for the first time to offer instruction in agriculture. Later, federal legislation provided resources for agricultural research and extension programming for dissemination of research findings to the people of Tennessee. Over time, the College expanded its academic majors from traditional agricultural fields to include natural resources and agribusiness. Today, academic majors represent the breadth of modern natural resources and agricultural sciences. The College, the Agricultural Experiment Station, the Agricultural Extension Service, and the College of Veterinary Medicine constitute the University of Tennessee Institute of Agriculture (http://www.agriculture.utk.edu).

The CASNR faculty conduct research using the resources available to them from the Agricultural Experiment Station. They are engaged in significant basic and applied research ranging from biotechnology to wildlife management to agricultural economics to public horticulture. On-campus and field research laboratories are used in the instructional programs of the College, while extension and research activities provide many students excellent opportunities for individualized study with faculty mentors, as well as part-time job opportunities.

Majors and Minors

The College offers a broad range of majors that prepare students for natural and social sciences based careers in a wide array of opportunities in agricultural sciences and natural resources.

Majors, Concentrations and Departments

- Agricultural Economics and Business with a concentration in agricultural equipment systems management (Department of Agricultural Economics)
- Agricultural Science with concentrations in agricultural education and agricultural extension education (Interdepartmental unit)
- Animal Science with concentrations in production/business, science/technology, science/technology—pre-veterinary medicine, and pre-veterinary medicine 3+1 (Department of Animal Science)
- Biosystems Engineering with a concentration in food engineering (Department of Biosystems Engineering and Environmental Science)
- Environmental and Soil Sciences with concentrations in agricultural systems technology, environmental science, and soil science (Department of Biosystems Engineering and Environmental Science)
- Food Science and Technology with concentrations in technology/business, pre-professional, and science (Department of Food Science and Technology)
- Forestry with concentrations in forest resources management and wildland recreation (Department of Forestry, Wildlife and Fisheries)
- Plant Sciences and Landscape Systems with concentrations in business/management, horticulture and agronomy, landscape design, public horticulture, and turfgrass management (Department of Plant Sciences and Landscape Systems)
- Wildlife and Fisheries Science (Department of Forestry, Wildlife and Fisheries)

http://www.casnr.utk.edu
The Department of Entomology and Plant Pathology offers undergraduate courses in support of the above majors. However, it does not have an undergraduate major.

The professional degree program in Biosystems Engineering receives strong support from the College of Engineering and is fully accredited by the Accreditation Board of Engineering and Technology. The forest resources management and wildlife recreation concentrations are fully accredited by the Society of American Foresters. The Food Science and Technology program maintains the standards as established by the Institute of Food Technologists. The agricultural education concentration meets state of Tennessee teacher education standards.

A pre-veterinary medicine curriculum is offered in the College. This program is designed to prepare students for admission to the College of Veterinary Medicine located on the Knoxville campus. The pre-professional program in Food Science and Technology allows students to be awarded a B.S. degree in agriculture with a major in Food Science after three years and upon successful completion of the first year at UT-Memphis dental, medical or pharmacy programs, or at the UT College of Veterinary Medicine.

Students may have a single or multiple minors in any of the UT colleges recorded on their transcripts without regard to course overlap among majors and minors. Minors offered by departments require a minimum of 16 credit hours in courses numbered 200 and above with the majority of credit hours at the 300 and 400 level. At least 9 of the credit hours required for the minor must be completed at the Knoxville campus. Each department offering a minor lists specific requirements. Minors offered in the CASNR are open to any students of other colleges, who have the approval of their academic advisor and department. Students working on a minor in CASNR should contact the specific department to have an academic advisor assigned.

**Minors and Departments**

- Agricultural Economics and Business (Department of Agricultural Economics)
- Animal Science (Department of Animal Science)
- Biosystems Engineering Technology (Department of Biosystems Engineering and Environmental Science)
- Food Science and Technology (Department of Food Science and Technology)
- Forestry (Department of Forestry, Wildlife and Fisheries)
- Plant Sciences and Landscape Systems (Department of Plant Sciences and Landscape Systems)
- Wildlife and Fisheries Science (Department of Forestry, Wildlife and Fisheries)

Specific degree requirements are given under each of the departmental headings in this section of the catalog. A student must meet all degree requirements as outlined by the department in which he/she is majoring in order to receive a degree. In all majors, particular emphasis is placed upon the sciences that are fundamental to agricultural sciences and natural resources; other courses are included to provide a university general education. In all curricula, there is the opportunity to select elective courses appropriate to the educational objectives of the individual students. The choice of electives in each major should be made with the guidance of the faculty academic advisor. However, it is ultimately the responsibility of the student to understand what is required to earn a degree.

All academic and general requirements of the University as stated in the front section of this catalog must be met by students enrolled in CASNR majors and they must complete the requirements in one of the majors. Students transferring into the College of Agricultural Sciences and Natural Resources from other than the UT Knoxville campus must have a grade point average of 2.0.

The use of transfer credit in subject areas appropriate to each organized curriculum will be considered by the student's academic advisor. If deemed appropriate, the petition to apply transfer courses will be processed through departments and submitted to the Dean of the College of Agricultural Sciences and Natural Resources for final approval. All University guidelines and policies must be followed. When desirable, validating or proficiency examinations may be requested to determine competence in an area and to avoid unnecessary repetition. Such examinations should be taken during the first semester in residence and must be conducted under the supervision of the head of the department in which the course is offered.

A minimum of 18 semester hours of upper-division agricultural and natural resources coursework appropriate to a specified major requirement, and approved by the major advisor, must be completed in residence to fulfill the requirements of baccalaureate degrees offered in the college.

A minimum grade point average of 2.0 for all courses taken in the department offering the major/concentration is required.

**Selection of Major**

When registering as freshmen, students who have decided upon their area of study select the major that meets their interests or career goals. A faculty member, from the department that manages the major, will serve as the academic advisor. It is not necessary, however, that freshman students select their major until the end of the first year. Undecided students will be assigned an academic advisor to assist them in exploring CASNR programs and to guide them in the planning of appropriate courses of study for the freshman year. Undecided students are encouraged to enroll in Agriculture and Natural Resources 100, Orientation to Studies in Agriculture and Natural Resources, during the fall semester of their first year of enrollment at The University of Tennessee. When they choose a major, an academic advisor will be assigned from the appropriate department.

Students interested in a career with a state’s agricultural extension service should select the agricultural science major and follow the agricultural extension education concentration. A foundation for advanced study beyond the baccalaureate degree may be established in any major if appropriate electives are included. Most departments offer a science concentration intended for those students who have a strong interest in pursuing graduate studies. A very careful choice of electives enables a student with an excellent academic record to complete a double or triple major by satisfying all the requirements in each major. For this purpose, the academic advisors of each major should be consulted. The academic advisors will work with the student to ensure that degree requirements are met. However, it is ultimately the responsibility of the student to understand what is required to complete multiple majors. Completing multiple majors will normally require more than 124 credit hours for graduation. It is the student's responsibility to keep academic advisors informed about each major and/or minor he/she is pursuing.
Students may include a maximum of 21 hours in non-directed electives taken on a satisfactory/no credit basis in the total hours required for graduation.

Graduate Studies

The CASNR faculty participates in both master of science and doctoral graduate student education and training. Master of Science study is available from all academic departments. Graduate programs leading to the Doctor of Philosophy degree in animal sciences, biosystems engineering, food technology and science, and plants, soils and insects are available.

General requirements and policies relating to admission to Graduate Studies at The University of Tennessee, residence, language, research, examination, and admission to candidacy shall apply to these programs and are described in the Graduate Catalog.

Minimum Requirements for Baccalaureate Degree Programs

All B.S. degree programs offered in the College have the following minimum requirements:

- Communicating through Writing (3 courses that include two English Composition courses and one course designated as writing intensive in the Undergraduate Catalog)
- Communication (1 course from specified list)
- Quantitative Reasoning (2 courses, 6 hours minimum, from two math or statistics courses from approved list)
- Arts and Humanities (2 courses, 6 hours minimum, from approved list)
- Social Sciences (2 courses, 6 hours minimum, from approved list)
- History (2 courses, 6 hours minimum, from approved list)
- Biological Sciences (2 courses, 6 hours minimum, College of Agricultural Sciences and Natural Resources courses included)
- Physical Sciences (2 courses, 6 hours minimum from Chemistry, Physics or Geology)
- Computer Applications (Agriculture and Natural Resources 290 or equivalent)
- Major Courses (24) (These courses are specified within each major)

For a total of 124 hours minimum.

Independent Study

Independent study, special topics courses, and seminars offered in each department provide exceptional students the opportunity to explore in greater depth subject matter of unusual significance to agriculture and natural resources. Students gain experience and are encouraged to assume responsibilities not available in formally organized courses. Working with students and faculty from all phases of agriculture and natural resources in the study of a common problem provides an exciting experience.

Students may also earn academic credit for faculty-guided international study. Students should consult with their academic advisors, department heads, or the Coordinator of International Programs in Agriculture and Natural Resources about international experiences in agriculture and natural resources.

CASN R Honors Research and Creative Achievements Program

The CASNR Honors Research and Creative Achievements Program is designed to allow students to expand and improve their critical thinking and analytical skills while pursuing the baccalaureate degree in the college. Students in this program will complete an Honors project, related to research, teaching or extension, under the guidance of a faculty member, and report that work in both written and oral format in a one-hour course, Agriculture and Natural Resources 498. The program objectives are:

- To increase the scope of educational attainment by providing a program with greater breadth and depth,
- To provide special recognition for outstanding scholastic achievement, and
- To foster a sustained interest in advanced education, research and creative achievement.

To be eligible, a student must be a junior, senior or second semester junior transfer student with a minimum grade point average of 3.25. Additionally, once a student is admitted to the program, he/she must maintain a GPA of 3.25 or above. Students will be invited by the College to participate in the program the first semester they are eligible and once per academic year thereafter. Students must apply for the program and be approved by a College Honors Committee. This application includes details of the proposed research, teaching or extension project. Upon admission, the student can enroll in Agriculture and Natural Resources 497, Honors Project (repeatable for a maximum of 6 hours), or departmental independent study credit. The student should enroll during the semester(s) that he/she is actively working on the project. Some departments may elect to allow some or all of this credit to count toward graduation requirements. Upon completion of their work, students must enroll in Agriculture and Natural Resources 498, Honors Presentations (1). Students prepare a written report and give an oral presentation to the Committee and interested individuals.

More detailed information is available from the CASNR Dean’s office.

Course Load

Students desiring to take more than 19 hours per semester must have the approval of their academic advisor and the dean of the college.

Transfer Students

Students who transfer to the CASNR from another institution or from another college at UT should contact the specific department of the major they wish to follow for assignment to an appropriate advisor. If the student is unsure of the specific major, he/she should contact the Dean’s office. Requests for substitutions (application of transfer credit to meet degree requirements if not already assigned through the Degree Audit Report System) or special examinations should be submitted for consideration during the first semester of study in the selected major.
Department of
AGRICULTURAL ECONOMICS

Professors
D.L. McLemore (Head), Ph.D. Clemson; J.R. Brooker, Ph.D. Florida; T.L. Cross (Assistant Dean), Ph.D. Oregon State; D.B. Eastwood, Ph.D. Tufts; B.C. English, Ph.D. Iowa State; C.D. Garland, Ph.D. Tennessee; D.G. Gerloff, Ph.D. Texas A&M; C.R. Hall, Ph.D. Mississippi State; K.L. Jensen, Ph.D. Oklahoma State; T.H. Klinefelter (Associate Dean), Ph.D. Kentucky; R.H. Orr, Ph.D. Illinois; W.M. Park, Ph.D. Virginia Tech; E.L. Rawls, Ph.D. Virginia Tech; D.E. Ray, Ph.D. Iowa State; J.B. Riley, Ph.D. Oklahoma State, R.K. Roberts, Ph.D. Iowa State; G.F. Smith, Ph.D. Tennessee

Associate Professors
D.G. De La Torre Ugarte, Ph.D. Oklahoma State; J.A. Larson, Ph.D. Oklahoma State; Steven T. Yen, Ph.D. Minnesota

Assistant Professors
E.F. Bazlen, Ph.D. Kentucky; C.D. Clark, Ph.D. Vanderbilt; K.H. Tiller, Ph.D. Tennessee

Emeriti Faculty
F.O. Leuthold, Ph.D. Wisconsin; S.D. Mundy, Ph.D. Tennessee

AGRICULTURAL ECONOMICS AND BUSINESS MAJOR

Advisors
Brooker, McLemore, Park, and Riley

Students majoring in Agricultural Economics and Business study the functioning of the agricultural sector of the global economic system and economic principles for decision making by business managers, consumers, policymakers and others within that system. Students complete a curriculum designed to provide them with a broad-based education and the specialized skills necessary for a successful career in the agribusiness industry or with a related organization or public agency. The curriculum builds upon the University-wide general education requirements by adding a set of directed electives from within the College of Agricultural Sciences and Natural Resources, a set of core courses from within the College of Business Administration, and a set of required courses within the Department of Agricultural Economics. Students then are able to customize their program by selecting among upper-division electives within the department. General elective hours in the curriculum also allow flexibility for students to pursue a minor within some area of technical agriculture or another field such as Communications. Students have ample opportunity to develop strong microcomputer skills and gain practical real-world experiences through case study analyses, the NAMA marketing team, internships, and extracurricular activities.

Students graduating with a major in Agricultural Economics and Business are prepared for a wide variety of careers. Many graduates take positions as managers of businesses involved in provision of farm input supplies, production of agricultural commodities, or processing of food products. Other graduates become marketing representatives or serve in a customer or public relations role. Quite a number of graduates establish careers in financial institutions, insurance agencies, or real estate companies. Many industry organizations and government agencies also have employment opportunities for our graduates. It is not uncommon for our graduates to take positions with businesses that are outside the food and agricultural industry. Graduates also find themselves well prepared for graduate study in agricultural economics or agribusiness management, as well as for professional programs such as law.

Requirements for the Bachelor of Science in Agriculture • Agricultural Economics and Business Major

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agribusiness Economic 110</td>
<td>1</td>
</tr>
<tr>
<td>Agriculture and Natural Resources 290</td>
<td>1</td>
</tr>
<tr>
<td>1 Biological Science Electives</td>
<td>8</td>
</tr>
<tr>
<td>2 History Electives</td>
<td>6</td>
</tr>
<tr>
<td>English 101, 102</td>
<td>6</td>
</tr>
<tr>
<td>Mathematics 123, 125</td>
<td>6</td>
</tr>
<tr>
<td>Accounting 201, 202</td>
<td>5</td>
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<tr>
<td>Agricultural Economics 212</td>
<td>3</td>
</tr>
<tr>
<td>Animal Science 280 or 381</td>
<td>3</td>
</tr>
<tr>
<td>Economics 201</td>
<td>4</td>
</tr>
<tr>
<td>Humanities Elective</td>
<td>3</td>
</tr>
<tr>
<td>Physical Science Electives</td>
<td>8</td>
</tr>
<tr>
<td>Environmental and Soil Sciences 210 or Integrated Plant Systems 230</td>
<td>3-4</td>
</tr>
<tr>
<td>Statistics 201</td>
<td>3</td>
</tr>
<tr>
<td>Agricultural Economics 310, 320, 342, 350, 412</td>
<td>13</td>
</tr>
<tr>
<td>English 295 or 360 or Journalism 201</td>
<td>3</td>
</tr>
<tr>
<td>2 Nondepartment Agricultural Electives</td>
<td>6</td>
</tr>
<tr>
<td>Rural Sociology 380</td>
<td>3</td>
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<tr>
<td>Speech 210 or 240</td>
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<tr>
<td>Statistics 320 or 365</td>
<td>3</td>
</tr>
<tr>
<td>Electives</td>
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Junior

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>Agricultural Economics 410</td>
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<tr>
<td>Agricultural Economics or Rural Sociology Electives</td>
<td>15</td>
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<tr>
<td>Economics 313</td>
<td>3</td>
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<tr>
<td>Humanities Elective</td>
<td>3</td>
</tr>
<tr>
<td>Electives</td>
<td>8-9</td>
</tr>
</tbody>
</table>

Total 127

1 Selected from Biology 101, 102, 130, 140.
2 Selected from Chemistry 100, 110, 120, 130, Geography 131, 132, Geology 101, 102, 103.
3 A minimum of 9 credit hours must be taken from the following courses: Agricultural Economics 355, 360, 420, 430, 442, 450, 470. A maximum of 3 credit hours can be used from each of the following courses: Agricultural Economics 356 and 492.

Minor in Agricultural Economics and Business

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economics 201</td>
<td>4</td>
</tr>
<tr>
<td>Agricultural Economics 212, 342, 350, 412</td>
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<td>Agricultural Economics Elective</td>
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</tr>
</tbody>
</table>

Total 19

Agricultural Equipment Systems Management Concentration

The Agricultural Equipment Systems Management concentration is a unique interdisciplinary program that combines courses from the Agricultural Economics and Business program and the Biosystems Engineering Technology program. Students develop a high degree of technical expertise with respect to agricultural equipment, as well as the ability to apply sound business and economic principles to management of a business.
Graduates are particularly well prepared for career opportunities in the agricultural machinery industry as dealership managers, as well as with agribusiness firms in operations management.

Students enrolling in the Agricultural Equipment Systems Management Concentration may apply for participation in the John Deere Dealership Management Program. This unique program is a partnership between John Deere and The University of Tennessee for the southern region of the United States. Students participating in the John Deere Dealership Management Program will have a dealership manager as a mentor, spend two summer internships in a dealership, and be considered for additional scholarship assistance.

**Requirements for the Bachelor of Science in Agriculture**

- **Agricultural Economics and Business Major**
- **Agricultural Equipment Systems Management Concentration**

**Freshman**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Credit</th>
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<tbody>
<tr>
<td>Agricultural Economics 110</td>
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<tr>
<td>Agriculture and Natural Resources 290</td>
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<td>3</td>
</tr>
<tr>
<td>Botany 110, 120</td>
<td></td>
<td>8</td>
</tr>
<tr>
<td>History Electives</td>
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<td>6</td>
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<tr>
<td>English 101, 102</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>Mathematics 123, 125</td>
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<td>6</td>
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</table>

**Sophomore**

<table>
<thead>
<tr>
<th>Course</th>
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<th>Credit</th>
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</thead>
<tbody>
<tr>
<td>Accounting 201, 202</td>
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<tr>
<td>Biosystems Engineering Technology 202</td>
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<tr>
<td>Chemistry 120</td>
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<tr>
<td>Economics 201</td>
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<td>4</td>
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<tr>
<td>Humanities Elective</td>
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<tr>
<td>Physics 161</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Environmental and Soil Sciences 210</td>
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<tr>
<td>Statistics 201</td>
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**Junior**

<table>
<thead>
<tr>
<th>Course</th>
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<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural Economics 310, 320, 342, 350, 412</td>
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<td></td>
</tr>
<tr>
<td>Biosystems Engineering 315</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Biosystems Engineering Technology 452</td>
<td></td>
<td>3</td>
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<tr>
<td>English 295 or 360 or Journalism 201</td>
<td></td>
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<tr>
<td>Humanities Elective</td>
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<td>3</td>
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<tr>
<td>Rural Sociology 380</td>
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<tr>
<td>Statistics 320 or 365</td>
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**Senior**

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>Agricultural Economics 410, 442</td>
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<td>Agricultural Economics or Rural Sociology Electives</td>
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<td>Biosystems Engineering Technology 432, 462</td>
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<tr>
<td>Biosystems Engineering Technology Electives</td>
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<td>Economics 313</td>
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<tr>
<td>Non-departmental Agricultural Elective</td>
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</tbody>
</table>

**Total** 127

1See list of acceptable courses below.

2A minimum of 6 credit hours must be taken from the following list of courses:
Agricultural Economics 355, 360, 420, 430, 450, 470. A maximum of 3 credit hours can be used from each of the following courses: Agricultural Economics 356 and 492.

**Non-departmental Agricultural Electives**

Animal Science 280, 381; Entomology and Plant Pathology 313, 321; Food Science and Technology 140; Forestry, Wildlife and Fisheries 211, 250; Plant Sciences and Landscape Systems 110, 235; Environmental and Soil Sciences 210.

**AGRICULTURAL AND NATURAL RESOURCES (Interdepartmental Unit)**

Agriculture and Natural Resources is an interdepartmental unit that offers a general Agricultural Science major with concentrations in Agricultural Education and Agricultural Extension Education. The major is designed for students who want a broad, general background in agriculture and natural resources and wish to pursue careers in non-formal agricultural education, agricultural communications or agriculture public relations.

The Agricultural Education concentration leads to teacher licensure in agricultural sciences in the State of Tennessee. The Agricultural Extension concentration is designed for those interested in agricultural extension careers. This major is also designed for students who want an individualized plan of study. Plans need to be submitted before the junior year and approved by the advisor, department head, and the Dean’s Office.

Students who are undecided as to their studies in agriculture and natural resources are advised to follow the agricultural science program and explore the different majors available in the college. They should work with their assigned advisor to eventually choose one of the Agricultural Sciences minors. Students in the Agricultural Education and Agricultural Extension Education concentrations or the Communications minor should follow the appropriate concentration and work with faculty in Agricultural and Extension Education housed in Morgan Hall.

**AGRICULTURAL SCIENCES MAJOR**

**Requirements for the Bachelor of Science in Agriculture**

- **Agricultural Science Major**

**Freshman**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tr>
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<td>Agriculture and Natural Resources 290</td>
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<tr>
<td>Animal Science 160</td>
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<tr>
<td>Biology 130-140</td>
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<td>English 101-102</td>
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<tr>
<td>Mathematics 119 and (123 or 125)</td>
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<td>6</td>
</tr>
<tr>
<td>Plant Sciences and Landscape System 110</td>
<td></td>
<td>6</td>
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</table>

**Sophomore**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural and Extension Education 211</td>
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<td>3</td>
</tr>
<tr>
<td>Agricultural Economics 212</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Food Sciences and Technology 140</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Environmental and Soil Sciences 210</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Plant Sciences and Landscape Systems 235</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Economics 201</td>
<td></td>
<td>4</td>
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</tbody>
</table>

**Junior**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural Economics 342</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Animal Science 220</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Entomology and Plant Pathology 313 or 321</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>History Elective</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Humanities Elective</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Plant Sciences and Landscape Systems 430</td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

1See list of acceptable courses below.

2Agricultural Sciences and Natural Resources or Communication Minor
Agriculture and Natural Resources Electives .................................................. 6

Speech 210 ....................................................................................................... 3

Plant Sciences and Landscape Systems 110 and 235 ...................................... 6

1 Humanities Elective ....................................................................................... 3

1 History Elective .............................................................................................. 3

1 Social Sciences Elective .................................................................................. 3

Free Electives .................................................................................................. 3

Total 124

1 Lists of appropriate electives are available and should be selected in conference with academic advisor. Students are encouraged to take some of the history and humanities courses at the 300 and 400 level. Three hours of the humanities, history, social sciences electives must be a writing-emphasis course.

2 Students should select one of the minors offered by the College of Agricultural Sciences and Natural Resources: Agricultural Economics, Animal Science, Biosystems Engineering Technology, Food Science and Technology, Forestry, Wildlife and Fisheries Science, Plant Sciences and Landscape Systems, OR one of the minors in the College of Communication and Information (see listing in this catalog), or submit an individualized plan of study before the Junior year, for approval by the advisor, department head, and the Dean’s Office. If the minor is less than 21 hours, the excess hours will become free electives.

Agricultural Education Concentration

Professors
R.G. Waters, Ph.D. Pennsylvania State

Emeriti Faculty

The Agricultural Education concentration is designed to prepare students to meet teacher certification requirements for agricultural education in the public schools. Teacher certification is given in collaboration with the College of Education, Health, and Human Sciences. Progression toward completion of a degree and licensure in agricultural education requires acceptance to the Teacher Education Program by a board of admissions. The admissions process begins at the time of matriculation at The University of Tennessee, whether the student enters as a freshman or transfer student.

Students must maintain a 2.7 undergraduate cumulative GPA to be admitted to the Teacher Education Program. It is important to note that all professional education courses must be passed with a minimum letter grade of “C” or better or they must be repeated.

Requirements for the Bachelor of Science in Agriculture
• Agricultural Science Major • Agricultural Education Concentration

Freshman Hours Credit
Agriculture and Natural Resources 100 ........................................................... 1
Agriculture and Natural Resources 290 ........................................................... 3
Animal Science 160 or 280 ............................................................................ 3
Biology 101-102 or 130-140 ........................................................................... 8
English 101-102 ............................................................................................... 6
Mathematics 119 and (123 or 125) ................................................................. 6
Economics 201 ................................................................................................. 4

Sophomore
Agricultural Economics 212 ........................................................................... 3
Agricultural and Extension Education 211 ..................................................... 3
Agricultural and Extension Education 201 ..................................................... 1
Biosystems Engineering Technology 202 ....................................................... 3
Chemistry 100-110 or 120-130 ....................................................................... 3
Environmental and Soil Sciences 210 ............................................................. 4
Food Science and Technology 269 ................................................................. 3
1 Humanities Elective ...................................................................................... 3
Plant Sciences and Landscape Systems 110 and 235 .................................... 6
Speech 210 .......................................................................................... 3

Total 126

1 Lists of appropriate electives are available and should be selected in conference with academic advisor. Students are encouraged to take some of the history and humanities courses at the 300- and 400-level. 3 hours of the humanities, history, social sciences electives must be a writing-emphasis course.

Agricultural Extension Education Concentration

Professors
R.G. Waters, Ph.D. Pennsylvania State

Emeriti Faculty

The Agricultural Extension Education concentration is designed to prepare students to gain the agricultural and educational skills necessary to work in the national Cooperative Extension System or the Agricultural Extension Service in Tennessee. The agricultural extension agent is a generalist in agriculture who plans and delivers non-formal educational programs for local citizens and community groups. The extension agent has an understanding of community needs, educational program planning and the non-formal learner as well as a broad background in the disciplines of agriculture and natural resources.

Students must maintain a 2.7 undergraduate cumulative GPA to be considered for employment in the Tennessee Agricultural Extension Service. Other states may or may not have established GPA requirements for employment.

Requirements for the Bachelor of Science in Agriculture
• Agricultural Science Major • Agricultural Extension Education Concentration

Freshman Hours Credit
Agricultural and Extension Education 211 ..................................................... 1
Agriculture and Natural Resources 100 ........................................................... 3
Agriculture and Natural Resources 290 ........................................................... 3
Animal Science 280 ........................................................................................ 3
Biology 101-102 or 130-140 ........................................................................... 8
English 101-102 ............................................................................................... 6
Mathematics 119 and (123 or 125) ................................................................. 6

Sophomore
Agricultural and Extension Education 201 ..................................................... 1
Agricultural Economics 212 ........................................................................... 3
Animal Science 220 ........................................................................................ 3
Chemistry 100-110 or 120-130 ....................................................................... 8
Economics 201 ................................................................................................. 4
Education Psychology 210 ..................................................... 3
Environmental and Soil Sciences 210 ........................................ 4
Plant Sciences and Landscape System 110 ............................... 3
Speech 210 ............................................................................. 3

Junior
Agricultural and Extension Education 345 and 346 .................... 6
Agricultural Economics 342 ..................................................... 3
Animal Science 330 ................................................................. 3
Entomology and Plant Pathology 313 (recommended course) 
or 321 ................................................................................. 3
Environmental and Soil Sciences 344 ....................................... 3
Food Science and Technology 269 .......................................... 2
Forestry Wildlife and Fisheries 250 ........................................ 3
1History Elective ................................................................. 3
1Humanities Elective ............................................................ 3
Plant Sciences and Landscape System 235 ............................... 3

Senior
Agricultural Sciences and Natural Resources Electives ............. 6
Animal Science 381 ............................................................... 3
Biosystems Engineering Technology 432 ............................... 3
Biosystems Engineering Technology 442 ............................... 3
Biosystems Engineering Technology 462 ............................... 3
Free Electives ....................................................................... 3
1History Elective ................................................................. 3
1Humanities Elective ............................................................ 3
Plant Sciences and Landscape Systems 430 ............................ 3

Total 124

1Lists of appropriate electives are available and should be selected in conference with academic advisor. Students are encouraged to take some of the history and humanities courses at the 300 and 400 level. Three hours of the humanities, history, social sciences electives must be a writing-emphasis course.

Department of ANIMAL SCIENCE

Professors
A.G. Mathew (Head), Ph.D. Purdue; G.E. Conaster, M.S. Kentuck; W.W. Gill, Ph.D. Kentuck; H.C. Goan, Ph.D. Michigan State; J.D. Godkin, Ph.D. Massachusetts; H.G. Kattesh, Ph.D. Virginia Tech; F.D. Kirkpatrick, Ph.D. Tennessee; C.D. Lane, Ph.D. Tennessee; D.G. Meadows, Ph.D. Texas A&M; J.B. Neel, Ph.D. Tennessee; S.P. Oliver, Ph.D. Ohio State; K.R. Robbins, Ph.D. Iowa State; G.W. Rogers, Ph.D. North Carolina State; A. Saxton, Ph.D. North Carolina State

Associate Professors
J.M. Grizzle, Ph.D. Florida; F. Harper, Ph.D. Rutgers; R.N. Heitmann, Ph.D. Maine; F. N. Schrick, Ph.D. Clemson; M.O. Smith, Ph.D. Oklahoma State; K.J. Stalder, Ph.D. Iowa State; J.C. Waller, Ph.D. Nebraska

Assistant Professors
J.L. Edwards, Ph.D. Florida; G. Pighetti, Ph.D. Penn State; C.J. Richards, Ph.D. Kentucky

Instructor
W.G. Upchurch, M.S. Tennessee

Advisors
Godkin, Grizzle, Heitmann, Kattesh, Pighetti, Richards, Robbins, Schrick, Smith, Upchurch, Waller

The curriculum is designed to prepare students for leadership careers in livestock production and related industries. Courses in horse, swine, poultry, sheep, dairy and beef cattle production and management may be elected, providing the opportunity for special or additional training in the dynamic livestock and husbandry technology (production) areas. Through course selection, students may prepare for general or livestock farming, management, business, or science, or elect the pre-veterinary courses preparatory for specialization. Elective selection permits special training for work with feed companies, meat animal, milk, egg, or poultry production, managerial or marketing groups, other educational agencies, supply and equipment business, agricultural extension services, agricultural communication, public relations, and various organizations associated with agriculture.

Further information on the Animal Science Department may be found at http://www.agriculture.utk.edu/ansci/. For a complete list of accepted directed electives appearing in the showcases below see the departmental Undergraduate Advising Guide at http://www.agriculture.utk.edu/ansci/undr_guide.htm.

ANIMAL SCIENCE MAJOR
Production/Business Concentration

Requirements for the Bachelor of Science in Animal Science • Animal Science Major • Production/Business Concentration

Freshman
Animal Science 160 ............................................................. 3
Biology 130-140 or 101-102 .................................................. 8
English 101-102 ................................................................ 6
Mathematics 123-125 .......................................................... 8-10
Chemistry 100-110 or 120-130 .......................................... 8

Sophomore
Animal Science 220, 280 ..................................................... 6
Agriculture and Natural Resources 290 ................................ 3
Environmental and Soil Sciences 210 ................................. 4
Speech 210 or 240 ............................................................ 3
Humanities Writing-Intensive Elective ................................. 3
Economics 201 ................................................................. 4
Humanities ...................................................................... 3
1Business Minor or Agricultural Economics and Business Minor ........................ 3
Social Science Elective ..................................................... 3

Junior
Animal Science 320, 330, 340, 380, 395 ............................ 13
Biological Science Restricted Elective ............................... 3
History .......................................................................... 6
Animal Science 361, 362, or 362 (select one course) ................ 2
1Business Minor* or 2Agricultural Economics and Business Minor* * ........................ 5*-6**

Senior
Animal Science 430,495 ..................................................... 4
Animal Science 481, 482, 483, 484, 485, or 489 (select two courses) ........ 6
1Business Minor* or 2Agricultural Economics and Business Minor** (plus 6 hours of any Agricultural Economics or Business courses) ............ 12**-13*
Free Electives ................................................................. 7-9

Total 124

1Requirements for a Business minor: Accounting 201, 202 (5); Economics 201 (4); Statistics 201 (3); Business Administration 201 (4); Finance 301 (3); Marketing 300 (3); Management 300 (3).

2Requirements for an Agricultural Economics and Business minor: Economics 201; Agricultural Economics 212, 342, 360, 412; Agricultural Economics Elective (3); Total 19 credits.
### Science/Technology Concentration

#### Requirements for the Bachelor of Science in Animal Science • Animal Science Major • Science/Technology Concentration

<table>
<thead>
<tr>
<th>Freshman</th>
<th>Hours Credit</th>
</tr>
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<tbody>
<tr>
<td>Animal Science 160</td>
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</tr>
<tr>
<td>Biology 130-140</td>
<td>8</td>
</tr>
<tr>
<td>English 101-102</td>
<td>6</td>
</tr>
<tr>
<td>Mathematics 123-125,141-142 or 151-152</td>
<td>6-8</td>
</tr>
<tr>
<td>Chemistry 120-130</td>
<td>8</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sophomore</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Animal Science 220,280</td>
<td>6</td>
</tr>
<tr>
<td>Agriculture and Natural Resources 290</td>
<td>3</td>
</tr>
<tr>
<td>Speech 210 or 240</td>
<td>3</td>
</tr>
<tr>
<td>Humanities Writing Intensive Elective</td>
<td>3</td>
</tr>
<tr>
<td>Economics 201</td>
<td>4</td>
</tr>
<tr>
<td>Physical Science and Mathematics Restricted Elective</td>
<td>8</td>
</tr>
<tr>
<td>Biological Science Restricted Elective</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Junior</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Animal Science 320, 330, 340, 380, 395</td>
<td>13</td>
</tr>
<tr>
<td>Biological Science Restricted Elective</td>
<td>8</td>
</tr>
<tr>
<td>Physical Science and Mathematics Restricted Elective</td>
<td>6</td>
</tr>
<tr>
<td>History Elective</td>
<td>3</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Senior</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Animal Science 495</td>
<td>1</td>
</tr>
<tr>
<td>Animal Science 481, 482, 483, 484, 485, or 489 (select one course)</td>
<td>3</td>
</tr>
<tr>
<td>Humanities Elective</td>
<td>3</td>
</tr>
<tr>
<td>Biological Science Restricted Elective</td>
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</tr>
<tr>
<td>History Elective</td>
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</tr>
<tr>
<td>Social Science Elective</td>
<td>3</td>
</tr>
<tr>
<td>Business Elective</td>
<td>6</td>
</tr>
<tr>
<td>Free Electives</td>
<td>9-11</td>
</tr>
</tbody>
</table>

**Total** 124

### Pre-Veterinary Medicine Program (3+1)

This program allows students to be awarded a Bachelor of Science degree in Animal Science after the successful completion of the first two semesters in the College of Veterinary Medicine (CVM). Students must begin this program early in the pre-veterinary curriculum. The specific requirements are:

- Completion of all pre-veterinary requirements.
- At least 12 hours of upper division (300- and 400-level courses) technical agriculture courses must be taken at UT.
- In addition to all the required pre-veterinary medical courses, the following (or approved equivalents) must be completed before entering the College of Veterinary Medicine:
  - Mathematics 123-125 or 141-142 or 151-152; Animal Science 160–3 hours; Animal Science 220–3 hours; Animal Science 330–3 hours; Animal Science 340–3 hours; Agriculture and Natural Resources 290–3 hours; Economics 201–4 hours; Speech 210 or 240–3 hours.

**Science/Technology—Pre-Veterinary Medicine Concentration**

#### Requirements for the Bachelor of Science in Animal Science • Animal Science Major • Science/Technology—Pre-Veterinary Medicine Concentration

<table>
<thead>
<tr>
<th>Freshman</th>
<th>Hours Credit</th>
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<tbody>
<tr>
<td>Animal Science 160</td>
<td>3</td>
</tr>
<tr>
<td>Biology 130-140</td>
<td>8</td>
</tr>
<tr>
<td>English 101-102</td>
<td>6</td>
</tr>
<tr>
<td>Mathematics 123-125,141-142 or 151-152</td>
<td>6-8</td>
</tr>
<tr>
<td>Chemistry 120-130</td>
<td>8</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sophomore</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Animal Science 220,280</td>
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<td>3</td>
</tr>
<tr>
<td>Speech 210 or 240</td>
<td>3</td>
</tr>
<tr>
<td>Humanities Writing-Intensive Elective</td>
<td>3</td>
</tr>
<tr>
<td>Economics 201</td>
<td>4</td>
</tr>
<tr>
<td>Chemistry 350,360 and 369</td>
<td>8</td>
</tr>
<tr>
<td>Biological Science Restricted Elective</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Junior</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Animal Science 320, 330, 340, 380, 395</td>
<td>13</td>
</tr>
<tr>
<td>Biological Science Restricted Elective</td>
<td>4</td>
</tr>
<tr>
<td>Physics 221-222</td>
<td>8</td>
</tr>
<tr>
<td>Humanities Elective</td>
<td>3</td>
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<tr>
<td>History Elective</td>
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<tr>
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<td>3</td>
</tr>
<tr>
<td>Biological Science Restricted Elective</td>
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<tr>
<td>Biochemistry 410</td>
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</tr>
<tr>
<td>History Elective</td>
<td>3</td>
</tr>
<tr>
<td>Social Science Elective</td>
<td>3</td>
</tr>
<tr>
<td>Business Elective</td>
<td>6</td>
</tr>
<tr>
<td>Free Electives</td>
<td>7-9</td>
</tr>
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</table>

**Total** 124

#### Requirements for the Bachelor of Science in Animal Science • Animal Science Major • Pre-Veterinary Medicine Program (3+1)

<table>
<thead>
<tr>
<th>Freshman</th>
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</thead>
<tbody>
<tr>
<td>Animal Science 160</td>
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<td>Biology 130-140</td>
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<td>Biochemistry 410</td>
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<td>History Elective</td>
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<td>Social Science Elective</td>
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<tr>
<td>Business Elective</td>
<td>6</td>
</tr>
<tr>
<td>Free Electives</td>
<td>4</td>
</tr>
</tbody>
</table>

**Total** 124
This curriculum meets the requirements for entrance to the College of Veterinary Medicine and after the first successful year in the College of Veterinary Medicine, the student will be awarded a Bachelor of Science in Animal Science. Should the student not gain admittance to the College of Veterinary Medicine after the Junior year, the student could complete the requirements for a major in Animal Science during the Senior year.

**Minor in Animal Science**

Animal Science 220 ................................................................. 3
Animal Science 280 ................................................................. 3
Animal Science 381 ................................................................. 3
Animal Science 480 Series ....................................................... 3
Eight credits from: Animal Science 320, 330, 340, no more than one of the 360 Series, 380, 420, 430, and the 480 Series .......... 8

**Total** 20

NOTE: The core courses give the minor student a broad background in physiology, nutrition, and management. Careful selection of the directed electives allows the minor student to emphasize physiological reproduction, nutrition, or management.

**Department of BIOSYSTEMS ENGINEERING AND ENVIRONMENTAL SCIENCE**

http://bioengr.ag.utk.edu

**Professors**

R.E. Yoder (Head), Ph.D. Colorado State, P.E.; J.T. Ammons, Ph.D. West Virginia; P.D. Ayers, Ph.D. North Carolina State, P.E.; M.J. Buehler, Ph.D. Clemson; H.P. Denton, Ph.D. North Carolina State; M.E. Essington, Ph.D. California (Riverside); R.S. Freeland, Ph.D. Tennessee, P.E.; C.R. Mote (Assistant Dean, Tennessee Agricultural Experiment Station), Ph.D. Ohio State, P.E.; F.D. Tompkins (Interim Dean, College of Engineering), Ph.D. Tennessee, P.E.; D.D. Tyler, Ph.D. Kentucky; L.R. Wilhelm (Interim Associate Dean, College of Engineering), Ph.D. Tennessee, P.E.; J.B. Wills, M.S. Tennessee; D.C. Yoder, Ph.D. Purdue

**Associate Professors**


**Assistant Professors**

J.R. Buchanan, Ph.D. Tennessee, P.E.; N. Eash, Ph.D. Iowa State; J. Lee, Ph.D. Iowa State; J. S. Tyner, Ph.D. Oklahoma State; F. R. Walker, Ph.D. North Carolina State

**Programs Available**

The Department of Biosystems Engineering and Environmental Science offers two undergraduate degree programs: Bachelor of Science in Biosystems Engineering and Bachelor of Science in Environmental and Soil Sciences. The Biosystems Engineering program is a four-year, ABET-accredited engineering program emphasizing engineering applications to biological systems. The Environmental and Soil Sciences program is a strong science-based program for students interested in the environmental sciences, soil science, and agricultural systems technology. Minors in either Environmental and Soil Sciences or in Biosystems Engineering Technology are also available. More detailed descriptions of each program are included with the curriculum material that follows.

**BIO SYSTEMS ENGINEERING MAJOR**

**Advisors**

Ayers, Freeland, Hart, Pordesimo, Raman, Wilkerson, Womac, D. Yoder

The College of Agricultural Sciences and Natural Resources, in cooperation with the College of Engineering, offers a four-year curriculum leading to the degree of Bachelor of Science in Biosystems Engineering. The curriculum is accredited by the Engineering Commission of the Accreditation Board for Engineering and Technology (ABET). Overall goals of the program are emphasized in the Vision, Educational Objectives, and Program Outcomes statements listed below. Program details are given in the showcase curricula and the individual course descriptions provided.

Career opportunities for graduates include the design, the development, or the management of: practices that minimize soil erosion and conserve water resources; biological waste treatment systems; safer machinery systems with lower environmental impact; or improved food and bio-processing systems. Employment opportunities are available in a wide variety of industries, government agencies, research and testing organizations, and educational and non-profit institutions.

The mathematics requirement for freshman admission to the Biosystems Engineering program is 3 1/2 units, including trigonometry and geometry. Otherwise, the general admission requirements of the University apply.

The curriculum provides instruction in the analytical and design skills needed to solve engineering problems related to biological and agricultural systems. Comprehensive design of systems and their components is emphasized in the senior year. In addition to the standard Biosystems Engineering curriculum, a concentration in Food Engineering is available. The degree program has provisions for elective courses to be taken in specified subject areas. Students should outline a plan for all such electives not later than their second year of study. Proper scheduling of courses is very important, since prerequisite requirements must be met. Thus, students must consult with their advisors each semester to review their scheduling plan.

Students majoring in Biosystems Engineering are eligible to participate in the Engineering Cooperative Scholarship program.
and other student activities in the College of Engineering. Biosystems Engineering majors interested in the Cooperative Engineering Scholarship program should consult with their faculty advisor or the head of the Biosystems Engineering and Environmental Science Department [phone (865) 974-7266; e-mail: bees@utk.edu].

Vision

The Biosystems Engineering program at The University of Tennessee is committed to linking engineering sciences and mathematics to real-world problems involving natural and man-made biologically-based systems. We strive to educate students to become engineers with the ability to serve humanity by applying engineering knowledge to solve problems facing society. This education is accomplished by providing a strong grounding in engineering fundamentals and incorporating hands-on, real-world design scenarios throughout the curriculum. Our graduates are technically competent in engineering design. They

- understand the steps in the engineering process;
- can define a problem;
- can gather the information required to solve a problem;
- can critically evaluate information from various sources;
- are creative and can synthesize solutions to a problem;
- can perform engineering analyses;
- can design components, machines, or systems to solve a problem;
- understand the importance of social, environmental, economic, and safety issues;
- appreciate the role of uncertainty and risk in engineering analyses.

Our graduates have the skills needed by professional engineers. Our program strives to instill

- an understanding of the engineering profession;
- the thrill of rewarding engineering accomplishments;
- a knowledge of the responsibilities of a practicing engineer;
- an ability to work effectively in teams of diverse makeup;
- an understanding of the importance of ethical conduct in a professional practice;
- effective oral, written, and graphical communications skills;
- the importance of taking initiative on projects;
- confidence in technical capabilities;
- strong personal time management skills;
- strong project management skills.

Educational Objectives

Specific educational objectives have been established for the Biosystems Engineering program. Consistent with the vision outlined above, the program objectives are that graduates have a mastery of:

- the mathematical tools normally required of junior engineers.
- the basic sciences relevant to engineering applications to biological systems;
- the engineering sciences required by their chosen concentration, and application of engineering principles to biological systems;
- the design process, including collection and analysis of information, identification of problems, formulation and selection of a solution, application of the solution, and effective communication of the results;
- teamwork skills, communication skills, and an understanding of professional, social, environmental, safety, and ethical considerations;
- the reasons for and importance of lifelong learning and of developing an appreciation for cultural and social expression beyond the realm of engineering.

Program Outcomes

To achieve the educational objectives listed above, a series of program outcomes have been adopted. These program outcomes provide specific measures to determine the degree of success in meeting each of the educational objectives. These outcomes are as follows:

- an ability to apply knowledge of mathematics, science, and engineering;
- an ability to design and conduct experiments, as well as to analyze and interpret data;
- an ability to design a system, component, or process to meet desired needs;
- an ability to function on multi-disciplinary teams;
- an ability to identify, formulate, and solve engineering problems;
- an understanding of professional and ethical responsibility;
- an ability to communicate effectively;
- the broad education necessary to understand the impact of engineering solutions in a global and societal context;
- a recognition of the need for, and an ability to engage in, lifelong learning;
- a knowledge of contemporary issues;
- an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice;
- an understanding of the complexity of biological systems, and the ability to apply engineering principles to those systems.

BIO SYSTEMS ENGINEERING MAJOR

Requirements for the Bachelor of Science in Biosystems Engineering • Biosystems Engineering Major

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freshman</td>
<td></td>
</tr>
<tr>
<td>Engineering Fundamentals 101, 102</td>
<td>12</td>
</tr>
<tr>
<td>Biosystems Engineering 104</td>
<td>1</td>
</tr>
<tr>
<td><strong>Chemistry 120</strong></td>
<td>4</td>
</tr>
<tr>
<td><strong>English 101, 102</strong></td>
<td>6</td>
</tr>
<tr>
<td><strong>Mathematics 141, 142</strong></td>
<td>8</td>
</tr>
<tr>
<td>General Education Elective (Contemporary Issues Cluster)</td>
<td>3</td>
</tr>
<tr>
<td>Sophomore</td>
<td></td>
</tr>
<tr>
<td>Biosystems Engineering 201, 221, 321</td>
<td>7</td>
</tr>
<tr>
<td>Mechanical Engineering 231, 321</td>
<td>6</td>
</tr>
<tr>
<td>Nuclear Engineering 203</td>
<td>3</td>
</tr>
<tr>
<td>Environmental and Soil Sciences 210</td>
<td>4</td>
</tr>
<tr>
<td><strong>Chemistry 130</strong></td>
<td>4</td>
</tr>
<tr>
<td>Mathematics 200, 231, 241</td>
<td>8</td>
</tr>
<tr>
<td>Microbiology 210</td>
<td>3</td>
</tr>
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</table>
### Junior

<table>
<thead>
<tr>
<th>Course Description</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biosystems Engineering 411, 421, 431, 441, 451</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>Electrical and Computer Engineering 301</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Fluid Science Elective</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>General Education Electives (Humanities or Arts Clusters)</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Economics 201</td>
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<td></td>
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### Senior

<table>
<thead>
<tr>
<th>Course Description</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biosystems Engineering 401, 402, 444</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>General Education Elective (Engineering Practice in a Global Societal Context Cluster)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Speech 210 or 240</td>
<td>3</td>
<td></td>
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<tr>
<td>English 360</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Industrial Engineering 405</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>General Education Electives (Multicultural Studies Cluster)</td>
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<tr>
<td>Technical Elective</td>
<td>3</td>
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</tr>
</tbody>
</table>

Total 131

1. Or equivalent Honors course.
2. If mathematics placement test does not indicate placement into Mathematics 141, please discuss mathematics option with advisor.
3. Select from the appropriate cluster in the College of Engineering listing of General Education Electives. In some instances, a single course may meet requirements of more than one cluster. When this occurs, a course from another cluster may be used to meet the total hour requirement. These electives must be approved in advance by advisor to insure that they meet University and ABET criteria.
4. Select from Civil and Environmental Engineering 390 Hydraulics or Aerospace Engineering 341 Fluid Mechanics.
5. Typically, upper-division courses in engineering or related areas. Must be approved in advance by advisor.

### Food Engineering Concentration

The concentration in Food Engineering emphasizes topics relevant to understanding and engineering food and bioprocessing operations. Students graduating with this emphasis are qualified for engineering positions in a variety of food and other biobased industries.

### Requirements for the Bachelor of Science in Biosystems Engineering • Biosystems Engineering Major • Food Engineering Concentration

#### Freshman

<table>
<thead>
<tr>
<th>Course Description</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engineering Fundamentals 101, 102</td>
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<td></td>
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<tr>
<td>Biosystems Engineering 104</td>
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<td></td>
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<tr>
<td>Chemistry 120</td>
<td>4</td>
<td></td>
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<tr>
<td>English 101, 102</td>
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<td></td>
</tr>
<tr>
<td>Mathematics 141, 142</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>General Education Elective (Contemporary Issues Cluster)</td>
<td>3</td>
<td></td>
</tr>
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</table>

#### Sophomore

<table>
<thead>
<tr>
<th>Course Description</th>
<th>Hours</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Biosystems Engineering 201, 221, 321</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>Mechanical Engineering 231, 321</td>
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</tr>
<tr>
<td>Nuclear Engineering 203</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Economics 201</td>
<td>4</td>
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<tr>
<td>Mathematics 200, 231, 241</td>
<td>8</td>
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<tr>
<td>Microbiology 210</td>
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#### Junior

<table>
<thead>
<tr>
<th>Course Description</th>
<th>Hours</th>
<th>Credit</th>
</tr>
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<tbody>
<tr>
<td>Biosystems Engineering 451</td>
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</tr>
<tr>
<td>Electrical and Computer Engineering 301</td>
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<td></td>
</tr>
<tr>
<td>Fluid Science Elective</td>
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<td></td>
</tr>
<tr>
<td>Food Science and Technology 310, 320, 329, 340</td>
<td>12</td>
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</tr>
<tr>
<td>General Education Electives (Humanities or Arts Cluster)</td>
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<td></td>
</tr>
<tr>
<td>Speech 210 or 240</td>
<td>3</td>
<td></td>
</tr>
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#### Senior

<table>
<thead>
<tr>
<th>Course Description</th>
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<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biosystems Engineering 401, 402, 411, 431</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>General Education Elective (Engineering Practice in a Global Societal Context Cluster)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>English 360</td>
<td>3</td>
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</tbody>
</table>

Total 130

1. Or equivalent Honors course.
2. If mathematics placement test does not indicate placement into Mathematics 141, please discuss mathematics options with advisor.
3. Select from the appropriate cluster in the College of Engineering listing of General Education Electives. In some instances, a single course may meet requirements of more than one cluster. When this occurs, a course from another cluster may be used to meet the total hour requirement. These electives must be approved in advance by advisor to insure that they meet University and ABET criteria.

### Biosystems Engineering Technology Minor

**Advisors**

Ayers, Freeland, Hart, Wilkerson, Womac, D. Yoder

No baccalaureate degree program is offered in biosystems engineering technology; however, seven undergraduate courses are offered to prepare students in other disciplines to apply elementary principles, techniques, and systems of engineering to the broad industry of agriculture.

### Minor in Biosystems Engineering Technology

#### Requirements

<table>
<thead>
<tr>
<th>Course Description</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biosystems Engineering Technology 202 or 212, 326, and 432</td>
<td>9</td>
<td></td>
</tr>
</tbody>
</table>

Total 18

### Environmental and Soil Sciences Major

**Advisors**

Eash, Essington, Hart, Lee, Logan, Radosevich

Many human activities adversely impact soil, water, and environmental quality. The Bachelor of Science degree in Environmental and Soil Sciences provides students with a strong grounding in basic sciences and technology to prepare them for careers in environmental and natural resource management. Students in this program study basic natural sciences as well as applied areas such as ecology, soil sciences, and natural resource policy. Students also build expertise with modern technologies such as geographical information systems, global positioning systems, and computer applications in natural resource management. Graduates are prepared to work in a wide variety of interesting and challenging career paths and to work with a broad variety of other professionals to solve complex problems. Examples of potential careers include: soil and environmental specialists and scientists; state and federal regulatory agency work; private consulting in environmental and agricultural areas; and working with non-governmental organizations with interests in agriculture, environment and natural resources.

Students receiving this Bachelor of Science degree are also very competitive for placement in graduate programs in environmental and agricultural sciences and technology, as well as law school.

The core program provides a strong grounding in the sciences and technology, while concentrations within the Bachelor of Science degree permit a focus on either science or technology. There are three concentrations in this degree program—Soil Science, Environmental Science, and Agricultural Systems Technology.
Environmental Science Concentration

The Environmental Science concentration is a blended program of science and technology that provides a strong, broad background in the natural sciences. The plan of study emphasizes human impacts on the long-term use and productivity of land and water resources. Emphasis is also placed on the tools used in the management of these resources. The curriculum provides a good foundation in the collection and analysis of the information required to characterize resource conservation problems and to make good resource use decisions. Directed technical electives allow the students to concentrate in an area of interest. Students in this program will gain the practical knowledge necessary to compete for career opportunities in government, environmental consulting firms, public health services, environmental research laboratories, and agricultural production, while also gaining the theoretical training necessary for continuing on for advanced degrees in a variety of environmentally related fields.

Requirements for the Bachelor of Science in Environmental and Soil Sciences Major • Environmental Science Concentration

**Freshman**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biology 130,140</td>
<td>8</td>
</tr>
<tr>
<td>Chemistry 120,130</td>
<td>8</td>
</tr>
<tr>
<td>English 101,102</td>
<td>6</td>
</tr>
<tr>
<td>Environmental and Soil Sciences 110</td>
<td>1</td>
</tr>
<tr>
<td>Mathematics 151,152</td>
<td>6</td>
</tr>
<tr>
<td>1Arts and Humanities Elective</td>
<td>3</td>
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</tbody>
</table>

**Sophomore**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture and Natural Resources 290</td>
<td>3</td>
</tr>
<tr>
<td>Biology 250</td>
<td>3</td>
</tr>
<tr>
<td>Biosystems Engineering Technology 212</td>
<td>3</td>
</tr>
<tr>
<td>Economics 201</td>
<td>4</td>
</tr>
<tr>
<td>Environmental and Soil Sciences 210</td>
<td>4</td>
</tr>
<tr>
<td>Geology 101</td>
<td>4</td>
</tr>
<tr>
<td>Microbiology 210</td>
<td>3</td>
</tr>
<tr>
<td>Physics 221</td>
<td>3</td>
</tr>
<tr>
<td>Statistics 201</td>
<td>3</td>
</tr>
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</table>

**Junior**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemistry 350 or 110</td>
<td>3-4</td>
</tr>
<tr>
<td>Environmental and Soil Sciences 301, 324, 355</td>
<td>7</td>
</tr>
<tr>
<td>Biosystems Engineering Technology 326</td>
<td>3</td>
</tr>
<tr>
<td>English 360</td>
<td>3</td>
</tr>
<tr>
<td>1History Electives</td>
<td>6</td>
</tr>
<tr>
<td>Speech 210 or 240</td>
<td>3</td>
</tr>
<tr>
<td>1Technical electives</td>
<td>9</td>
</tr>
</tbody>
</table>

**Senior**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural Economics 470 or Economics 462</td>
<td>3</td>
</tr>
<tr>
<td>Environmental and Soil Sciences 434, 444, 462, 481</td>
<td>12</td>
</tr>
<tr>
<td>Biosystems Engineering Technology 414,474</td>
<td>6</td>
</tr>
<tr>
<td>Ecology and Evolutionary Biology 470</td>
<td>3</td>
</tr>
<tr>
<td>Industrial Engineering 405</td>
<td>3</td>
</tr>
<tr>
<td>Philosophy 346</td>
<td>3</td>
</tr>
<tr>
<td>1Technical Elective</td>
<td>3</td>
</tr>
</tbody>
</table>

Total 131-132

1Consult the list of approved electives for these courses. If you wish to take a course not on the list, consult your advisor first.

Soil Science Concentration

This concentration is a rigorous, science-based program for students interested in the field of soil science. The curriculum emphasizes soils and their long-term use and productivity, as well as surface and sub-surface water resources. Students will understand natural resource problems and their management, including soil and water conservation issues, land use problems, waste disposal, and reclamation of disturbed lands. Other areas of interest can be addressed through the appropriate selection of technical electives in the program. Students in this program will gain the practical knowledge necessary to compete for career opportunities in government, environmental consulting firms, public health services, environmental research laboratories, and agricultural production, while also gaining the theoretical training necessary for continuing on for advanced degrees in a number of environmentally related fields.

Requirements for the Bachelor of Science in Environmental and Soil Sciences Major • Soil Science Concentration

**Freshman**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Botany 110, 120 or Biology 130, 140</td>
<td>8</td>
</tr>
<tr>
<td>Chemistry 120,130</td>
<td>8</td>
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<tr>
<td>English 101,102</td>
<td>6</td>
</tr>
<tr>
<td>Environmental and Soil Sciences 110</td>
<td>1</td>
</tr>
<tr>
<td>Mathematics 151,152</td>
<td>6</td>
</tr>
<tr>
<td>1Arts and Humanities Elective</td>
<td>3</td>
</tr>
</tbody>
</table>

**Sophomore**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture and Natural Resources 290</td>
<td>3</td>
</tr>
<tr>
<td>Chemistry 350 or 110</td>
<td>3-4</td>
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<tr>
<td>Economics 201</td>
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<tr>
<td>Environmental and Soil Sciences 210</td>
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<tr>
<td>Geology 101</td>
<td>4</td>
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<td>Microbiology 210</td>
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<td>Physics 221</td>
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<td>Statistics 201</td>
<td>4</td>
</tr>
<tr>
<td>Speech 210 or 240</td>
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</table>

**Junior**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Botany 321</td>
<td>3</td>
</tr>
<tr>
<td>Chemistry 310 and 319</td>
<td>4</td>
</tr>
<tr>
<td>Environmental and Soil Sciences 301, 324</td>
<td>4</td>
</tr>
<tr>
<td>Environmental and Soil Sciences 334 or 355</td>
<td>3</td>
</tr>
<tr>
<td>Biosystems Engineering Technology 326</td>
<td>3</td>
</tr>
<tr>
<td>Philosophy 346</td>
<td>3</td>
</tr>
<tr>
<td>1History Electives</td>
<td>6</td>
</tr>
<tr>
<td>1Technical Electives</td>
<td>3</td>
</tr>
<tr>
<td>English 295 or 360 or Journalism 450 or 451</td>
<td>3</td>
</tr>
</tbody>
</table>

**Senior**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural Economics 470 or Economics 462</td>
<td>3</td>
</tr>
<tr>
<td>Environmental and Soil Sciences 434,442,444,462,481</td>
<td>15</td>
</tr>
<tr>
<td>1Technical Electives</td>
<td>9</td>
</tr>
<tr>
<td>Unrestricted Electives</td>
<td>5-6</td>
</tr>
</tbody>
</table>

Total 128

1Consult the list of approved electives for these courses. If you wish to take a course not on the list, consult your advisor first.

Agricultural Systems Technology Concentration

The Agricultural Systems Technology concentration emphasizes the skills needed to manage the sophisticated technological systems that are increasingly essential to modern agricultural production. The program starts with a basic science foundation, adds courses in crop production, pest control, and
protection of soil and water resources, then introduces the technologies and control systems available to make production more efficient and environmentally sound. It rounds out the curriculum with analysis and management courses to tie all the information together and to most effectively use it in making and carrying out management decisions. Directed technical electives allow the student to concentrate in a particular area of agricultural production or to develop increased skills with particular technologies or management tools. Students from this program will have the skills and understanding to be successful in agribusiness, agricultural consulting, or employment with agricultural equipment and material suppliers.

Requirements for the Bachelor of Science in Environmental and Soil Sciences Major • Agricultural Systems Technology Concentration

<table>
<thead>
<tr>
<th>Year</th>
<th>Hours Credit</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freshman</td>
<td>12</td>
<td>Botany 110, 120.</td>
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<tr>
<td></td>
<td>8</td>
<td>Chemistry 120, 130.</td>
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<tr>
<td></td>
<td>8</td>
<td>English 101, 102.</td>
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<td></td>
<td>1</td>
<td>Environmental and Soil Sciences 110</td>
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<tr>
<td></td>
<td>3</td>
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<tr>
<td></td>
<td>6</td>
<td>Mathematics 151, 152</td>
</tr>
<tr>
<td>Sophomore</td>
<td>9</td>
<td>Agricultural Economics 212</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Agriculture and Natural Resources 290</td>
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<tr>
<td></td>
<td>3</td>
<td>Biosystems Engineering Technology 212</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>Economics 201</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>Environmental and Soil Sciences 210</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Environmental and Soil Sciences 334</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>Plant Sciences and Landscape Systems 235</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Plant Sciences and Landscape Systems 334</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>Physics 222</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Statistics 201</td>
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<tr>
<td>Junior</td>
<td>14</td>
<td>Agricultural Economics 350 or 355</td>
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<td></td>
<td>3</td>
<td>Biosystems Engineering Technology 326</td>
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<td>3</td>
<td>English 360</td>
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<td>3</td>
<td>Entomology and Plant Pathology 313</td>
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<td>Entomology and Plant Pathology 321</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>Environmental and Soil Sciences 301</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Environmental and Soil Sciences 324</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>History Elective</td>
</tr>
<tr>
<td></td>
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<td>Humanities Elective</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Speech Communication 210 or 240</td>
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<td></td>
<td>6</td>
<td>Technical Electives</td>
</tr>
<tr>
<td>Senior</td>
<td>30</td>
<td>Agricultural Economics 470 or Economics 462</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Biosystems Engineering Technology 414</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Biosystems Engineering Technology 432</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Biosystems Engineering Technology 434</td>
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<td></td>
<td>3</td>
<td>Biosystems Engineering Technology 462</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Biosystems Engineering Technology 474</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Environmental and Soil Sciences 481</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Humanities Elective</td>
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<td></td>
<td>3</td>
<td>Industrial Engineering 405</td>
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<td></td>
<td>6</td>
<td>Technical Electives</td>
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</table>

Total: 132

Minor in Environmental and Soil Sciences

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental and Soil Sciences 210</td>
<td>4</td>
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<tr>
<td>Environmental and Soil Sciences 324</td>
<td>3</td>
</tr>
<tr>
<td>Biosystems Engineering Technology 326</td>
<td>3</td>
</tr>
<tr>
<td>Electives in Environmental and Soil Sciences and/or</td>
<td></td>
</tr>
<tr>
<td>Biosystems Engineering Technology at the 300 level or higher</td>
<td>9</td>
</tr>
</tbody>
</table>

Total: 19

Elective List for All Concentrations • BACHELOR OF SCIENCE DEGREE IN ENVIRONMENTAL AND SOIL SCIENCES

Arts and Humanities Electives

Any course listed under the College of Arts and Sciences Humanities requirements; (all courses of instruction—art, ceramics, design/graphics, drawing, education, History, media arts, painting, printmaking, sculpture); Asian Studies 101, 102; Classics (all courses); Dance (all courses); Music (all courses of instruction—education, ensemble, general, history, instrument, jazz, keyboard, instrument, musicology, theory); Philosophy 120, 130, 135; Religious Studies (all courses); Theatre (all courses); Women’s Studies 210, 215, 320, 330, 332, 382, 383, 422, 433, 483.

History Electives

Anthropology 120, 130; History (all courses); Any course listed under the College of Arts and Sciences Upper Level Distribution Requirements.

Technical Electives for Soil Science and Environmental Science Concentrations

Note that some electives have required prerequisites. The prerequisites are either required in the major or are listed below. See individual course descriptions in the catalog for specific information.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Hours</th>
</tr>
</thead>
</table>
| Agriculture and Natural Resources 333; Animal Science 220, 260, 280, 320, 330, 380, 381; Biochemistry and Cellular and Molecular Biology 310, 401, 402, 410, 471, 481; Biology 240, 250; Biosystems Engineering Technology (any course not required for the major); Botany 305, 306, 310, 321, 330, 404, 412, 431, 451, 499; Chemistry 230, 310, 319, 320, 329, 350, 360, 369, 430, 439, 471, 481; Ecology and Evolutionary Biology 420, 308, 370, 380, 431, 470, 474, 484; Entomology and Plant Pathology 313, 321; Environmental and Soil Sciences (any course not required for the major); Food Science and Technology 420, 429; Forestry 314, 315, 321; Forestry, Wildlife and Fisheries 250, 311, 312, 313, 317, 410, 412; Geography 101, 102, 131, 132, 310, 334, 410, 411, 412, 413, 415, 434, 436, 439; Geology 102, 103, 201, 202, 310, 345, 370, 420, 450, 455, 485, 486; History 346; Planning 401; Plant Sciences and Landscape Systems 235, 334, 340, 431, 433, 434, 435, 440, 453; Management 301, 321, 431; Microbiology 310, 319, 410, 411, 470; Physics 222; Political Science 300, 330, 340, 430, 431, 440, 442, 470; Public Health 310; Sociology 360; University 462; University 464, 465; Statistics (any course above 201); University Studies 322.

Technical Electives for Agricultural Systems Technology Concentration

Accounting 201, 202; Agricultural Economics 342, 350, 355; Biosystems Engineering Technology 202, 442, 445; Business Administration 201, 361; Environmental and Soil Sciences 442, 444, 462; Geography 413; Industrial Engineering 304, 423; Plant Sciences and Landscape Systems 430, 434, 440, 445; Management 410, 411, 471.

Department of ENTOLOGY AND PLANT PATHOLOGY

Professors

Associate Professors
C.H. Canaday, Ph.D. Ohio State; K.D. Gwinn, Ph.D. North Carolina State; F.A. Hale, Ph.D. Ohio State; G. Lentz, Ph.D. Iowa State; B.H. Ownley, Ph.D. North Carolina State; J.A. Skinner, Ph.D. California (Davis); K.M. Vail, Ph.D. Florida

Assistant Professors
K. Lamour, Ph.D. Michigan State; J.K. Moulton, Ph.D. Arizona State

Advisors
Gerhardt

Courses in economic entomology, diseases and insect of ornamental plants, forest protection, plant pathology, and veterinary entomology are available to undergraduate students. No undergraduate degree exists in the Department of Entomology and Plant Pathology, but a program leading to the Master of Science degree with a major in entomology and plant pathology and a Ph.D. degree in Plants, Soils and Insects with concentrations in entomology, plant pathology, integrated pest management, and bioactive natural products are available (see Graduate Catalog). Instruction and training is provided in those disciplines which deal with the natural hazards that are major causes of losses in agricultural production, namely, insects and plant diseases. Courses of study in entomology or plant pathology should give the student an appreciation of insects and microorganisms, their ecology, population dynamics, potential damage to plants and their products, and various considerations in control alternatives.

Department of FOOD SCIENCE AND TECHNOLOGY

Professors
C.J. Brekke (Head), Ph.D. Wisconsin; P.M. Davidson, Ph.D. Washington State; F.A. Draughon, Ph.D. Georgia; W.C. Morris, Ph.D. Iowa State; M.P. Penfield, Ph.D. Tennessee

Associate Professors
D.A. Golden, Ph.D. Georgia; H.D. Loveday, Ph.D. Kansas State; J.R. Mount, Ph.D. Ohio State

Assistant Professors
J. Weiss, Ph.D. Massachusetts; S. Zivanovic, Ph.D. Arkansas

Advisors
Davidson, Draughon, Golden, Loveday, Mount, and Penfield

The curriculum concentrations in Food Science and Technology include a science concentration, a technology/business concentration, and a pre-professional concentration. They prepare students to apply basic scientific and business principles to manufacturing, processing, distribution, and utilization of food products that meet the needs and desires of consumers. Coursework emphasizes the basic principles of converting raw food materials into safe acceptable consumer products. Selected commodity courses detail processing of specific types of food materials. Students entering the program should have an interest in the sciences, such as chemistry, microbiology, and biology.

Career opportunities include positions in the food industry in quality assurance, production management, marketing, governmental inspection, etc. The science concentration of coursework conforms to the guidelines in the model curriculum of the Institute of Food Technologists. The technology/business concentration allows students to obtain an agribusiness or business minor or specialization in an area that strengthens the food science and technology major. A special problems course provides opportunity for practical training in food processing plants and laboratories or federal and state laboratories. The pre-professional concentration provides the science background necessary for Medical, Pharmacy, Dental or Veterinary Medicine school and also allows the student to develop an understanding of food science principles that will apply to their chosen profession.

FOOD SCIENCE AND TECHNOLOGY

MAJOR

Science Concentration

Requirements for the Bachelor of Science in Agriculture
• Food Science and Technology Major • Science Concentration

<table>
<thead>
<tr>
<th>Concentration</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freshman</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1English</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>2Mathematics</td>
<td></td>
<td>6-7</td>
</tr>
<tr>
<td>3Biological Sciences</td>
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<td>4</td>
</tr>
<tr>
<td>4Chemistry 120-130</td>
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<td>8</td>
</tr>
<tr>
<td>5Food Science and Technology 140</td>
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<td>3</td>
</tr>
<tr>
<td>6Agriculture and Natural Resources 290</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Sophomore</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7Chemistry 350,360-369</td>
<td></td>
<td>8</td>
</tr>
<tr>
<td>8Microbiology 210 or higher</td>
<td></td>
<td>3</td>
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<tr>
<td>9Physics</td>
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<td>3</td>
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<tr>
<td>4Social Science Electives</td>
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<tr>
<td>5Humanities Elective</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>6Food Science and Technology 340</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>7Nutrition 100 or 300</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Junior</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8Food Science and Technology 301</td>
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</tr>
<tr>
<td>9Food Science and Technology 410 and 430</td>
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<tr>
<td>10Biochemistry and Cellular and Molecular Biology 310 or 410</td>
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<td>4</td>
</tr>
<tr>
<td>11Biosystems Engineering Technology 422</td>
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<td>3</td>
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<tr>
<td>12Plant Sciences and Landscape Systems 471 or Statistics 201</td>
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<td>3</td>
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<tr>
<td>13Humanities Elective</td>
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<tr>
<td>14Writing-Intensive course</td>
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<tr>
<td>15history Electives</td>
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<tr>
<td>16Oral Communication</td>
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<tr>
<td>17Electives</td>
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<td>3</td>
</tr>
<tr>
<td>18Total</td>
<td></td>
<td>124</td>
</tr>
</tbody>
</table>

1May select either English 101 and 102 or English 118 and 102. (Students who obtain a grade of A or B in 118 may complete their freshman requirement with 102, 355, or with a 200-level course in the English department. The 200-level course may, if so listed, also be used toward the Humanities requirement.)

Mathematics placement depends on high school courses and grades and ACT scores. Mathematics 119 or higher is required and Mathematics 125 or 141 or 151.

1May be chosen from Biology or Botany course.

5One course other than English requirements must be designated as writing-intensive in the Undergraduate Catalog.

6May be chosen from Speech Communication 210, 220 or 240.
Although a Bachelor of Science degree is not required for admission to the Colleges of Dentistry or Medicine, most of the students accepted into these programs have the baccalaureate degree before admission. Therefore, students are encouraged to plan to complete all requirements for Bachelor of Science degree before enrolling in either of these colleges. A Bachelor of Science degree can be obtained before enrolling in the Doctor of Pharmacy (Pharm.D.) program.

**Requirements for the Bachelor of Science in Agriculture**
- **Food Science and Technology Major**
- **Technology/Business Concentration**

**Freshman**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1English</td>
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</tr>
<tr>
<td>2Mathematics</td>
<td>6</td>
</tr>
<tr>
<td>3Biological Sciences</td>
<td>4</td>
</tr>
<tr>
<td>Chemistry 100 or 120</td>
<td>4</td>
</tr>
<tr>
<td>4Humanities Elective</td>
<td>3</td>
</tr>
<tr>
<td>Food Science and Technology 140</td>
<td>2</td>
</tr>
<tr>
<td>Agriculture and Natural Resources 290</td>
<td>3</td>
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**Sophomore**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
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<tbody>
<tr>
<td>Chemistry 110</td>
<td>4</td>
</tr>
<tr>
<td>Microbiology 210 or higher</td>
<td>3</td>
</tr>
<tr>
<td>Food Science and Technology 240</td>
<td>2</td>
</tr>
<tr>
<td>3Social Science Electives</td>
<td>6</td>
</tr>
<tr>
<td>4Writing-Intensive Course</td>
<td>3</td>
</tr>
<tr>
<td>5Oral Communication</td>
<td>3</td>
</tr>
<tr>
<td>Food Science and Technology 340</td>
<td>3</td>
</tr>
<tr>
<td>Nutrition 100 or 300 or Animal Science 381</td>
<td>3</td>
</tr>
</tbody>
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**Junior**

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>Food Science and Technology 301, 410 and 430</td>
<td>8</td>
</tr>
<tr>
<td>4Humanities Elective</td>
<td>3</td>
</tr>
<tr>
<td>5History Electives</td>
<td>3</td>
</tr>
<tr>
<td>6Oral Communication</td>
<td>3</td>
</tr>
<tr>
<td>7Writing-intensive course</td>
<td>3</td>
</tr>
<tr>
<td>Statistics 201 or Plant Sciences and Landscape Systems 471</td>
<td>3</td>
</tr>
<tr>
<td>Statistics 365</td>
<td>3</td>
</tr>
<tr>
<td>Electives</td>
<td>3</td>
</tr>
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</table>

**Senior**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
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<tbody>
<tr>
<td>Food Science and Technology 401</td>
<td>1</td>
</tr>
<tr>
<td>Food Science and Technology 420, 429</td>
<td>5</td>
</tr>
<tr>
<td>Food Science and Technology 445, 460, 490 and 495</td>
<td>13</td>
</tr>
<tr>
<td>4Directed Technology/Business Electives</td>
<td>3</td>
</tr>
<tr>
<td>Food Science and Technology 493</td>
<td>3</td>
</tr>
<tr>
<td>Electives</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total** 124

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1. May select either English 101 and 102 or English 118 and 102. (Students who obtain a grade of A or B in 118 may complete their freshman requirement with 102, 355, or with a 200-level course in the English department. The 200-level course may, if so listed, also be used toward the Humanities requirement.)
2. Mathematics placement depends on high school courses and grades and ACT scores. Mathematics 110 or higher is required and Mathematics 119 or higher.
3. May be chosen from Biology or Botany course.
4. Lists of appropriate courses are available and should be selected in conference with an academic advisor.
5. One course other than English requirements must be designated as “writing-intensive” in the *Undergraduate Catalog*.
6. May be chosen from Speech Communication 210, 220 or 240.

**Pre-Professional Concentration**

These programs in Pre-Dental, Pre-Medicine, Pre-Pharmacy and Pre-Veterinary Medicine allow students to be awarded a Bachelor of Science degree in Agriculture with a major in Food Science and Technology, after three years and the successful completion of the first year (two semesters) in UT-Memphis Dental, Medical, or Pharmacy programs or The University of Tennessee College of Veterinary Medicine, Knoxville. The last 30 hours of the three-year curriculum must have been taken at The University of Tennessee, Knoxville. A total of 124 hours must be completed by the end of the first year in professional school. No later than December 31 of the student’s first year in professional school(s) he/she should contact the Department of Food Science and Technology in order to check on graduation procedures for this program.

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1. May select either English 101 and 102 or English 118 and 102. (Students who obtain a grade of A or B in 118 may complete their freshman requirement with 102, 355, or with a 200-level course in the English department. The 200-level course may, if so listed, also be used toward the Humanities requirement.)
2. Mathematics placement depends on high school courses and grades and ACT scores. Mathematics 110 or higher is required and Mathematics 119 or higher.
3. Pre-Med and Pre-Vet require Physics 222 also.
4. Lists of appropriate courses are available and should be selected in conference with an academic advisor.
5. Biochemistry and Cellular and Molecular Biology 230 required for Pre-Dental, Biochemistry and Cellular and Molecular Biology 310 required for Pre-Veterinary Medicine.
6. One course other than English requirements must be designated as “writing-intensive” in the *Undergraduate Catalog*.
7. May be chosen from Speech Communication 210, 220 or 240.
8. May be chosen from Food Science and Technology 442, 460, 469, 493
Minor in Food Science and Technology

Food Science and Technology 140 ................................................................. 3
Food Science and Technology 340 ............................................................ 3
Food Science and Technology 410 ............................................................ 4
Food Science and Technology 420 ............................................................ 2
Food Science and Technology 429 ............................................................ 3
Food Science and Technology Elective ....................................................... 2

Total  17

Department of Forestry, Wildlife and Fisheries

Professors
G.M. Hopper (Head), Ph.D. Virginia Tech; B.L. Dearden, Ph.D. Colorado State; T.K. Hill, Sr., Ph.D. Auburn; D.M. Ostermeier, Ph.D. Syracruse; M.R. Pelton, Ph.D. Georgia; T.G. Rials, Ph.D. Virginia Tech; S.E. Schlarbaum, Ph.D. Colorado State; C.A. Speer, Ph.D. Utah State; R.J. Strange, Ph.D. Oregon State; J.L. Wilson, Ph.D. Tennessee

Associate Professors
D.A. Buehler, Ph.D. Va Tech; J.D. Clark, Ph.D. Arkansas; W.W. Clatterbuck, Ph.D. Mississippi State; J.M. Fly, Ph.D. Michigan; R.L. Hay, Ph.D. Duke; D.G. Hodges, Ph.D. Georgia

Assistant Professors

Instructor
W.G. Minser, M.S. Tennessee

Forestry Advisors
Buckley, Fly, Hodges, Knowe, Ostermeier, and Schlarbaum

Wildlife and Fisheries Advisors
Buehler, King, Minser, Muller, Strange, and Wilson

Emeriti Faculty
E.R. Buckner, Ph.D. North Carolina State; R.W. Dimmick, Ph.D. Wyoming; J.C. Rennie, Ph.D. North Carolina State; G. Schneider, Ph.D. Michigan State; D.A. Stumbo, Ph.D. Minnesota

For curricular details, faculty biographies, and other departmental information, please check the departmental website: http://fwf.ag.utk.edu

The mission of the Department of Forestry, Wildlife and Fisheries is to advance the management, utilization, and appreciation of natural resources in Tennessee, the region, and beyond through programs in teaching, research, and extension.

The department offers two majors. The major in Forestry leads to the Bachelor of Science in Forestry and the major in Wildlife and Fisheries Science leads to the Bachelor of Science in Wildlife and Fisheries Science. The Forestry major has two concentrations: Forest Resources Management and Wildland Recreation.

Enrollment Management Plan

All majors in the Department of Forestry, Wildlife and Fisheries must submit an application for progression with relevant career goals, names of three references, work experience (both volunteer and paid positions) related to natural resources and service and professional activities, and a transcript, before registering for junior classes.

To be considered for progression into the upper division of the program, applicants must have submitted all required documents (application form, resume, and transcript) by a March 15 deadline, late in the spring semester.

Those students who have met all preliminary requirements for progression, including having relevant career goals, will be ranked based on the combined score of their cumulative grade point average (GPA) and GPA in core courses. The combined score will be 50% cumulative GPA (minimum 2.2) and 50% cumulative GPA (minimum 2.2) in core courses. Applicants with the highest scores will be accepted into the programs. The number of applicants accepted into each program will be determined based on resources available. Applicants will be notified of their acceptance by the start of registration for summer semester.

Applicants who are not accepted into the program and who believe that extenuating circumstances prevented their acceptance into the program may appeal the decision to a faculty committee (i.e., S.A.C.). A written statement in which the case is made for acceptance is required for all applicants. It must be submitted within one week of the rejection notice.

Appellants receiving a positive response from the appeals committee will be accepted into programs on a provisional basis through the first semester of their junior year. The progress of provisional students will be reviewed at the end of the fall semester. At that time, they will either be fully admitted or released from the program.

Core Courses

Students must have completed or been enrolled in all core courses by the end of the semester in which they apply for acceptance into upper-division courses. They must complete all core courses before entering upper-division courses. They will also need the prerequisites to the individual upper-division courses.

Forestry

Two courses in English composition (English 101 and 102 or equivalent); college algebra and calculus (Mathematics 119 and 125 or equivalent); general chemistry (Chemistry 100 or equivalent); two courses in general botany (Botany 110 and 120 or equivalent); general economics (Economics 201 or equivalent); general ecology (Biology 250 or equivalent).

Wildlife and Fisheries Science

Wildlife and Fisheries Science Majors: two courses in English composition (English 101 and 102 or equivalent); college algebra and calculus (Mathematics 119 and 125 or equivalent); two courses in chemistry (Chemistry 120/130 or 100/110 or equivalent); two courses in general biology (Biology 130/140 or 101/102 or equivalent); general economics (Economics 201 or equivalent); public speaking (Speech Communication 210 or 240 or equivalent); statistics (Statistics 201 or equivalent); soil sciences (Environmental and Soil Sciences 210 or equivalent); Introduction to Microcomputers (Agriculture and Natural Resources 290 or equivalent); general ecology (Biology 250 or equivalent).

FORESTRY MAJOR

The profession of forestry is the science, the art, and the practice of managing and using for human benefit the natural resources that occur on and in association with forest lands. Benefits are derived from the multiple resources of the forest: wood, water, wildlife, recreation, forage, and environmental
amenities. Foresters are managers of these resources. Thus, our principal instructional objective is to provide the broad education needed to deal effectively with the complex of forest resources.

**Forest Resources Management Concentration**

The Forest Resources Management concentration provides an opportunity to obtain an education related to the management of the broad spectrum of wildland resources. In addition to the core of required courses, there are about 18 elective credit hours for broad studies or specialized training in one or more areas of forestry. These areas and examples of related fields of study are: Forest Biology including plant physiology and morphology, ecology, genetics, tree nutrition, forest soils; Forest Business Management including economics, accounting, finance, marketing, management science; Forest Economics including economics, business administration, social science; Forest Inventory including mathematics, statistics, computer science; Wildland Recreation including natural and social sciences; and Wildlife Management including ecology and botany.

The University has over 21,000 acres of forest land available for teaching, research, and demonstration. The Tennessee Valley Authority, Great Smoky Mountains National Park, and Cherokee National Forest provide additional land and facilities available to the teaching program. Contained within these areas is a variety of tree species and forest types ranging from elements of the boreal forest to southern pines and hardwoods.

Lumber, pulp and paper, and other wood-using industries cooperate in conducting tours and demonstrating industrial processes.

### Requirements for the Bachelor of Science in Forestry

**Forestry Major • Forest Resource Management Concentration**

<table>
<thead>
<tr>
<th>Course (Department and Title)</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Freshman</em></td>
<td></td>
</tr>
<tr>
<td>English 101,102</td>
<td>6</td>
</tr>
<tr>
<td>Mathematics 119,125</td>
<td>6</td>
</tr>
<tr>
<td>Botany 110,120</td>
<td>8</td>
</tr>
<tr>
<td>Forestry, Wildlife and Fisheries 100, 211</td>
<td>4</td>
</tr>
<tr>
<td>Forestry 100</td>
<td>3</td>
</tr>
<tr>
<td>1Social Sciences Elective</td>
<td>3</td>
</tr>
<tr>
<td>1Electives</td>
<td>3-4</td>
</tr>
<tr>
<td><em>Sophomore</em></td>
<td></td>
</tr>
<tr>
<td>Economics 201</td>
<td>4</td>
</tr>
<tr>
<td>Statistics 201</td>
<td>3</td>
</tr>
<tr>
<td>Agriculture and Natural Resources 290</td>
<td>3</td>
</tr>
<tr>
<td>Forestry, Wildlife and Fisheries 311</td>
<td>3</td>
</tr>
<tr>
<td>Forestry 315</td>
<td>3</td>
</tr>
<tr>
<td>Speech 210 or 240</td>
<td>3</td>
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<tr>
<td>Chemistry 100</td>
<td>3</td>
</tr>
<tr>
<td>Environmental and Soil Sciences 210</td>
<td>3</td>
</tr>
<tr>
<td>English 295</td>
<td>3</td>
</tr>
<tr>
<td>1Electives</td>
<td>3-4</td>
</tr>
<tr>
<td><em>Junior</em></td>
<td></td>
</tr>
<tr>
<td>Forestry, Wildlife and Fisheries 312, 313, 317</td>
<td>8</td>
</tr>
<tr>
<td>1Humanities Elective</td>
<td>3</td>
</tr>
<tr>
<td>1Electives</td>
<td>3</td>
</tr>
<tr>
<td>2Electives</td>
<td>2-4</td>
</tr>
</tbody>
</table>

**Senior**

Forestry, Wildlife and Fisheries 410, 412, 416 .............................................. 9
Forestry 331, 332, 420, 422 ................................................................. 8
2Ethics Elective .................................................................................. 3
1History Elective ................................................................................. 3
1Communications Elective .................................................................. 3
2Electives ............................................................................................. 3-4

**Total** 135

*Lists of appropriate courses in Social Sciences, Humanities, History, and Communications are available at the Department of Forestry, Wildlife and Fisheries Office.
*Electives are chosen in conference with advisor. Lists of courses for specializations and minors to compliment the Forest Resources Management Concentration are available at the Department of Forestry, Wildlife and Fisheries Office.
*Students will choose one course from Philosophy 110, 130, 240, 290, 342, 346.

### Wildland Recreation Concentration

The Wildland Recreation concentration is an interdisciplinary program that prepares students to work in natural resource based recreation settings on private and public lands, including local, state, and national parks, and other state and federal agencies and private or non-profit organizations providing outdoor recreational opportunities.

Students prepare for professional positions in the planning, development, interpretation, and management of private and public lands for recreational purposes. Students also learn the basic philosophy and principles associated with the use of leisure time and the relationship of natural resources to the constructive use of leisure time.

Elective credits may be used to obtain specializations in complementary areas such as education, cultural and natural history interpretation, forestry, wildlife, fisheries, communication and public relations, agricultural extension education, ornamental horticulture and landscape design, business and public administration, and the natural sciences, including ecology, botany, and geology as well as recreation and leisure studies, such as private/commercial and therapeutic recreation.

Ten weeks of professional internship experience (6 credits) are required during the final 45 hours of credit in the program. The internship is a highly structured field experience guided by specific learning objectives pre-approved by the instructor and the field supervisor. The student receives one credit per two weeks of full-time field experience. Preparations for the internship should be made well in advance of actual placement. Summer employment or volunteer work in a related field prior to the internship is highly encouraged.

### Requirements for the Bachelor of Science in Forestry

**Forestry Major • Wildland Recreation Concentration**

<table>
<thead>
<tr>
<th>Course (Department and Title)</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Freshman</em></td>
<td></td>
</tr>
<tr>
<td>English 101,102</td>
<td>6</td>
</tr>
<tr>
<td>Mathematics 119,125</td>
<td>6</td>
</tr>
<tr>
<td>Botany 110,120</td>
<td>8</td>
</tr>
<tr>
<td>Forestry, Wildlife and Fisheries 100, 211</td>
<td>4</td>
</tr>
<tr>
<td>Forestry 100</td>
<td>3</td>
</tr>
<tr>
<td>1Social Sciences Elective</td>
<td>3</td>
</tr>
<tr>
<td>1Communications Elective</td>
<td>3</td>
</tr>
<tr>
<td>1Electives</td>
<td>3-4</td>
</tr>
<tr>
<td>2Electives</td>
<td>2-4</td>
</tr>
</tbody>
</table>

**Total** 135

*Lists of appropriate courses in Social Sciences, Humanities, History, and Communications are available at the Department of Forestry, Wildlife and Fisheries Office.
*Electives are chosen in conference with advisor. Lists of courses for specializations and minors to compliment the Wildland Recreation Concentration are available at the Department of Forestry, Wildlife and Fisheries Office.
*Students will choose one course from Philosophy 110, 130, 240, 290, 342, 346.
Chemistry 100 .................................................. 4
Speech 210 or 240 .................................................. 3
Environmental and Soil Sciences 210 .................. 3
Forestry 315 or Biology 250 .................................. 3
3 hours from: Sociology 360 or 456, Sociology 345, 363, 370, 380, or 464 or Geography 320, 323, or 345 .......... 3
Electives .................................................. 2
Junior
Forestry, Wildlife and Fisheries 312, 313, 317 .................. 8
Forestry 321,423 .................................................. 6
Forestry 314 or Political Science 440 or 441 or Management 301 or 440 .............................................. 2-3
Recreation 310, 410, 415, 430, or 470 ...................... 3
3 hours from: Biosystems Engineering Technology 326, Geography 411, Planning 402, Biosystems Engineering Technology 212, or Geography 310 or 410 .................. 3
3 hours from: Plant Sciences and Landscape Systems 280, 326, 350, 370, 421 .............................................. 3
3 hours from: Philosophy 346 or 110, 130, 240, 290, 342 ...... 3
Electives .................................................. 5
Senior
Forestry, Wildlife and Fisheries 412, 416 .................................. 6
Forestry 422 .................................................. 6
Forestry, Wildlife and Fisheries 410 or Wildlife and Fisheries Science 443 or 444 or 445 .................. 3
Forestry 495 .................................................. 6
3 hours from: Journalism 451, 290, Communication 450, Art Media Arts 231, 236, Journalism 201, 310, 412, 450, English 295 .................................................. 3
3 hours from: Speech Communication 330,440, 220, 230, 270, 310, 320, 420 .................................................. 3
Humanities Elective .................................................. 3
History Elective .................................................. 3
Electives .................................................. 5-8
Total 135

Electives are chosen in conference with advisor.
Lists of appropriate courses in Humanities and History are available at the Department of Forestry, Wildlife and Fisheries Office.

Minor in Forestry
Forestry Wildlife and Fisheries 211 or 250 .................. 3
Forestry Wildlife and Fisheries 311 .................................. 3
Select from Forestry Wildlife and Fisheries 100, 312, 313, 412, or 416 ...... 10
Total 16

NOTE: Prerequisites will not be waived

APPROVED ELECTIVE COURSES • FOREST RESOURCE MANAGEMENT • CONCENTRATION • WILDLAND RECREATION CONCENTRATION

The two concentrations require courses in a number of General Education areas. Below are specific courses that meet the requirements in each of the areas. Courses listed for social science, humanities, and history are from a University-wide list, while those for communications have been developed within the Department of Forestry, Wildlife and Fisheries. Other courses may satisfy the requirements. If you are interested in an unlisted course, see the description of each area under General Education in this catalog and then discuss it with your advisor.

Social Sciences

Humanities
African and African-American Studies 429*; Art (all courses of instruction—art, ceramics, design/graphic, drawing, education, history, media arts, painting, printmaking, sculpture); Asian Languages (all courses except 199—see catalog for writing-emphasis courses); Asian Studies 101*, 102*; Classics (all courses—see catalog for writing-emphasis courses); Comparative Literature 202*, 203*; Dance (all courses—see catalog for writing-emphasis courses); English 201-351 and 401-454,480,482 (see catalog for writing-emphasis courses); French (all courses except 199—see catalog for writing-emphasis courses); German (all courses except 199—see catalog for writing-emphasis courses); Greek (all courses—see catalog for writing-emphasis courses); Hebrew (all courses—see catalog for writing-emphasis courses); Italian (all courses except 199—see catalog for writing-emphasis courses); Latin (all courses—see catalog for writing-emphasis courses); Medieval Studies (all courses—see catalog for writing-emphasis courses); Music (all courses of instruction—education, ensemble, general, history, instrument, jazz, keyboard, performance, technology, theory, voice—see catalog for writing-emphasis courses); Philosophy (all courses—see catalog for writing-emphasis courses); Persian (all courses—see catalog for writing-emphasis courses); Portuguese (all courses except 199—see catalog for writing-emphasis courses); Religious Studies (all courses—see catalog for writing-emphasis courses); Russian (all courses except 199—see catalog for writing-emphasis courses); Spanish (all courses except 199—see catalog for writing-emphasis courses); Theatre (all courses—see catalog for writing-emphasis courses); Women’s Studies 210**, 215**, 320,330**, 332**, 382**, 383**, 422, 433**, 483**.

History
African and American Studies 201, 202,350,371,372-445; American Studies 456; Anthropology 361; Architecture 211, 212,406,412,413,415; Art History 162, 183,403,411,415,419,425,431,442,445,452,453,454,461,463; Asian Studies 101, 102; Classics 381, 382, Dance 480,490; English 301, 302; History (all courses); Latin-American Studies 360, 361; Medieval Studies 312, 313; Military Science and Leadership 430; Music History 115, 120, 125, 310; Philosophy 120, 121; Religious Studies 101, 310; Theatre 411, 412; Woman’s Studies 432, 453.

Communications
English 263, 355,360,363-365,450,460,462,463,464; Journalism 201, 310, 412,414,450,451,456; Speech Communication 210*, 220, 240*, 270, 310,320, 340, 420.*All concentrations require 210 or 240; taking both would satisfy the speech requirement and the communications elective.

**Writing-emphasis course.

WILDLIFE AND FISHERIES SCIENCE MAJOR

Wildlife and fisheries management is the science and art of maintaining populations of wild animals at levels consistent with the best interests of wild species and of the public. Management goals may be aesthetic, economic, or ecological. Success depends upon wildlife and fisheries biologists providing assistance; scholarly application of scientific information and methods to these goals; ecological perspective; and execution of programs to maintain past successes, to prevent repetition of past failures, and to prepare for future needs.

Requirements for the Bachelor of Science in Wildlife and Fisheries Science Major

Freshman Hours Credit
English 101, 102 .................................................. 6
Mathematics 119 .................................................. 3
Biology 130-140 or 101-102 ...................................... 8
Chemistry 120-130 or 100-110 .................................... 8
1History or Humanities Elective .................................. 3
Forestry, Wildlife and Fisheries 100, 211 .................. 4
Sophomore
Mathematics 125 .................................................. 3
Statistics 201 or Plant Sciences and Landscape Systems 471 .......... 3
Agriculture and Natural Resources 290 .................. 3
The mission of the Department of Plant Sciences is to serve the teaching, extension and outreach, and research needs of clients, stakeholders and peers in the areas of agronomic and horticultural crops, and landscape design. A robust teaching program is at the center of this mission.

The department provides quality academic instruction to undergraduate and graduate students. Experienced instructors who are committed to the success of their students staff the department. Advisors give students sound advice in the selection of career specialties, elective courses, and provide students the best education possible. Professors want their students to be successful and enjoy positive student-teacher relationships. They keep track of job openings and assist students during the job selection process. Since most Plant Sciences and Landscape Systems faculty are also research scientists, undergraduate students interested in advanced studies are directed into appropriate courses necessary for admission to graduate school. Students are also encouraged to work with faculty researchers in a variety of laboratory, greenhouse, or field experiments.

The department offers a major leading to a Bachelor of Science degree in Plant Sciences and Landscape Systems with five concentrations: Business Management, Horticulture and Agronomy, Landscape Design, Public Horticulture, and Turfgrass Management.
Each concentration offers a different approach to address the breadth of opportunities available to Plant Sciences and Landscape Systems undergraduate students. A minimum of 124 credit hours including internship is required for each concentration. Full-time summer internships are available at selected local, regional, and national companies or institutions. Part-time summer or semester internships are available from Plant Sciences and Landscape Systems, other university departments and laboratories and local commercial firms. For more information about undergraduate and other departmental programs, please contact our web site at: http://psls.ag.utk.edu/.

**Enrollment Management Plan**

All students in the Department of Plant Sciences must meet certain requirements before registering for upper-division Plant Sciences and Landscape Systems classes. Admittance to each of the departmental concentrations will be determined by completion of core courses with a “C” or better for an individual concentration, completion of a minimum of 65 credit hours toward the degree, and a minimum cumulative grade point average (GPA) of 2.25.

To be considered for progression into the upper division of the program, majors must submit an application of intent for progression prior to class registration for the next semester. Faculty members will review students’ transcripts for completion of all core courses and meeting the minimum GPA. Students must have completed all but 3 core courses for their concentration by the end of the semester in which they apply for acceptance into upper-division courses. They must complete all core courses before entering upper-division courses. They will also need the prerequisites to these individual upper-division courses.

Once admitted for progression to upper-division programs, students must maintain a cumulative GPA of 2.25. Junior and senior majors in Plant Sciences and Landscape Systems whose cumulative GPA falls below the minimum of 2.25 will not be allowed to register in departmental upper division classes until they again meet the required GPA for progression. This enrollment management plan is effective for all students enrolling in Plant Sciences and Landscape Systems on or after Fall semester 2001.

**PLANT SCIENCES AND LANDSCAPE SYSTEMS MAJOR**

**Core Courses**

Majors must have completed the core courses for their respective Plant Sciences and Landscape Systems concentration. Students must declare a concentration early in their undergraduate program and strictly follow the curriculum described for it. Students who transfer into Plant Sciences and Landscape Systems from other colleges or programs must meet the same requirements as those entering the department as freshmen. The core courses for the Plant Sciences and Landscape Systems concentrations are:

**Business Management Concentration:** two courses in English composition (English 101 and 102 or equivalent); college algebra and calculus (Mathematics 119 and 125 or equivalent); general chemistry (Chemistry 100-110 or 120-130 or equivalent); general botany (Botany 110 and 120 or equivalent); general accounting (Accounting 201 and 202 or equivalent); soil science (Environmental and Soil Sciences 210 or equivalent).

**Horticulture and Agronomy Concentration:** two courses in English composition (English 101 and 102 or equivalent); college algebra and either precalculus or calculus (Mathematics 119 and 125 or 130) or completion of Mathematics 151 and 152 or equivalent; general chemistry (Chemistry 100-110 or 120-130 or equivalent); general botany (Botany 110 and 120 or equivalent); soil science (Environmental and Soil Sciences 210 or equivalent); either Introduction to Ornamental Horticulture (Plant Sciences and Landscape Systems 110 or equivalent) or Introduction to Crop Science (Plant Sciences and Landscape Systems 235 or equivalent).

**Landscape Design:** two courses in English composition (English 101 and 102 or equivalent); college algebra and finite math or calculus (Mathematics 119 and 123 or 125 or equivalent); general chemistry (Chemistry 100 or 120 or equivalent) and one natural science elective; general botany (Botany 110 and 120 or equivalent); soil science (Environmental and Soil Sciences 210 or equivalent); Basic Landscape Plants (Plant Sciences and Landscape Systems 220 or equivalent); Fundamentals of Landscape Design (Plant Sciences and Landscape Systems 280 or equivalent).

**Public Horticulture Concentration:** two courses in English composition (English 101 and 102 or equivalent); college algebra and finite math or calculus (Mathematics 119 and 123 or 125 or equivalent); general chemistry (Chemistry 100 or 120 or equivalent) and one natural science elective; general botany (Botany 110 and 120 or equivalent); soil science (Environmental and Soil Sciences 210 or equivalent); Computer Applications to Problem Solving (Agriculture and Natural Resources 290 or equivalent); Introduction to Ornamental Horticulture (Plant Sciences and Landscape Systems 110 or equivalent).

**Turfgrass Management Concentration:** two courses in English composition (English 101 and 102 or equivalent); college algebra and finite math or calculus (Mathematics 119 and 123 or 125 or equivalent); general chemistry (Chemistry 100-110 or 120-130 or equivalent); general botany (Botany 110 and 120 or equivalent); soil science (Environmental and Soil Sciences 210 or equivalent); either Introduction to Ornamental Horticulture (Plant Sciences and Landscape Systems 110 or equivalent) or Introduction to Crop Science (Plant Sciences and Landscape Systems 235 or equivalent); Computer Applications to Problem Solving (Agriculture and Natural Resources 290 or equivalent).

**Business Management Concentration**

The Business Management Concentration is fundamental to those interested in starting their own companies. Students receive a minor in either Business Administration or Agricultural Economics and Business allowing easier access to management positions as well as graduate programs such as the Master of Business Administration (MBA) should they want to continue their education in the future.
Requirements for the Bachelor of Science in Plant Sciences and Landscape Systems • Plant Sciences and Landscape Systems Major • Business Management Concentration

Freshman
Botany 110-120 ................................................................................. 8
Chemistry 100-110 or 120-130 ......................................................... 8
English 101-102 ............................................................................ 6
Mathematics 119 and 125 ............................................................... 6
Plant Sciences and Landscape Systems 110 or 235 ......................... 3
1Humanities Elective ........................................................................ 3

Sophomore
Select 2 from Plant Sciences and Landscape Systems
220, 230, 251, or 280 ................................................................. 6
Agriculture and Natural Resources 290 .......................................... 3
Accounting 201-202 ................................................................... 6
Economics 201 ........................................................................... 4
Environmental and Soil Sciences 210 ................................................. 4
Speech Communication 210 or 240 ................................................. 3
Select Statistics 201 for Business Minor or
Agricultural Economics 212 for Agricultural Economics Minor ........ 3
1History Elective ........................................................................... 3

Junior
Select 3 from Plant Sciences and Landscape Systems
326, 330, 334, 340, 350, 360, 370, 380, 390, or 391 ......................... 9
Plant Sciences and Landscape Systems 492 ..................................... 3
Select Business Administration 201 and
Management 300 for Business Minor or Agricultural
Economics 342 and 350 for Agricultural Economics Minor ........... 6-7
Select 2 from Technical Electives ...................................................... 6
1History Elective ........................................................................... 3
1Humanities Elective ..................................................................... 3

Senior
Select 3 Plant Sciences and Landscape Systems 410, 421, 427,
429, 430, 431, 433, 434, 435, 436, 440, 446, 450, 451, 453,
460, 471, 480, 485, or 493 ............................................................ 7-10
Plant Sciences and Landscape Systems 490 ..................................... 1
Select Finance 301 and Marketing 300 for Business Minor
or Agricultural Economics 412 and an Agricultural
Economics Elective for Agricultural Economics Minor ................. 6
1Social Science Elective ................................................................ 3
Unrestricted Electives .................................................................. 8-12

Total 124

1Lists of appropriate electives are available and should be selected in conference with academic advisor. Students are encouraged to take some of the history and humanities courses at the 300 and 400 level. Three hours of the humanities or history electives must be a writing emphasis course.

Horticulture and Agronomy Concentration

The Horticulture and Agronomy concentration is designed for the student desiring to pursue professions that include graduate studies, research and commercial production of agronomic and horticultural crops. Careful selection of departmental courses and other electives in consultation with an academic advisor will prepare graduates for the career of their choice. The concentration consists of two tracks of study: (1) emphasis in agronomy and (2) emphasis in horticulture.

Requirements for the Bachelor of Science in Plant Sciences and Landscape Systems • Plant Sciences and Landscape Systems Major • Horticulture and Agronomy Concentration

Freshman
Botany 110-120 ................................................................................. 8
Chemistry 100-110 or 120-130 ......................................................... 8
English 101-102 ............................................................................ 6
Mathematics 119 and 125 or Mathematics 151-152
for Agronomy Track or Mathematics 119 and (123 or 125) for
Horticulture Track ....................................................................... 6
Select Plant and Soil Sciences 235 for Agronomy Track
or Plant and Soil Sciences 110 for Horticulture Track ................. 3

Sophomore
1Directed Electives ......................................................................... 6
Agriculture and Natural Resources 290 .......................................... 3
1Humanities Elective ........................................................................ 3
1Social Science Elective .................................................................... 3-4
Environmental and Soil Sciences 210 ................................................. 4
Speech Communication 210 or 240 ................................................. 3
Economics 201 ............................................................................. 4
1History Elective ............................................................................ 3

Junior
Plant Sciences and Landscape Systems 330 ..................................... 3
Select Plant Sciences and Landscape Systems 334
for Agronomy Track or select Plant Sciences and
Landscape Systems 370 for Horticulture Track ......................... 3
Select 2 from Plant Sciences and Landscape Systems 340, 370,
390 or 391 for Agronomy Track or select 2 from Plant Sciences
and Landscape Systems 334, 340, 350, 360, 390 or 391
for Horticulture Track ................................................................. 6
Plant Sciences and Landscape Systems 492 ..................................... 3
Environmental and Soil Science 334 ................................................. 3
1Directed Elective .......................................................................... 3
Select 1 from Entomology and Plant Pathology 313, 321, or 410 ....... 3
Technical Elective .......................................................................... 3-4
1History Elective ............................................................................ 3

Senior
Plant Sciences and Landscape Systems 471 and 490 ....................... 4
Botany 321 ................................................................................. 4
Chemistry 350 ............................................................................. 4
1Technical Elective ........................................................................ 3-4
1Directed Electives ......................................................................... 12-13
1Humanities Elective ..................................................................... 3
Unrestricted Electives .................................................................. 1-4

Total 124

1Lists of appropriate electives are available and should be selected in conference with academic advisor. Students are encouraged to take some of the history and humanities courses at the 300 and 400 level. Three hours of the humanities or history electives must be a writing-emphasis course.

Landscape Design Concentration

Landscape designers create aesthetic concepts and practical plans for improved outdoor living. Students study fundamental and advanced landscape design, landscape design graphics, computer aided landscape design, surveying, art, socio-economic impact of plants, field botany, professional practices, basic woody plant identification, landscape construction and maintenance methods. The development of comprehensive design projects helps students prepare for careers in landscape design or advanced studies in landscape architecture. Graduates in design have access to a large segment of the ornamental horticulture commodity areas of employment.
### Requirements for the Bachelor of Science in Plant Sciences and Landscape Systems • Plant Sciences and Landscape Systems Major • Landscape Design Concentration

<table>
<thead>
<tr>
<th>Freshman</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Botany 110-120</td>
<td>8</td>
</tr>
<tr>
<td>Chemistry 100 or 120</td>
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<tr>
<td>English 101-102</td>
<td>6</td>
</tr>
<tr>
<td>Mathematics 119 and (123 or 125)</td>
<td>6</td>
</tr>
<tr>
<td>Plant Sciences and Landscape Systems 110</td>
<td>3</td>
</tr>
<tr>
<td>1Social Science Elective</td>
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</tr>
</tbody>
</table>

**Sophomore**

- Plant Sciences and Landscape Systems 220, 280 | 6
- Agriculture and Natural Resources 290 | 3
- 1Natural Science Elective | 4
- Environmental/Technical Elective | 3
- Environmental and Soil Sciences 210 | 4
- Speech Communication 210 or 240 | 3
- 1Humanities Elective | 3
- Unrestricted Electives | 6

**Junior**

- Plant Sciences and Landscape Systems 350, 380 | 6
- Select 2 from Plant Sciences and Landscape Systems 230, 231, 330, 340, or 370 | 6
- Plant Sciences and Landscape Systems 390 or 391 | 3
- Environmental/Technical Elective | 3
- 1History Elective | 3
- 1Social Science Elective | 3
- Unrestricted Electives | 7

**Senior**

- Plant Sciences and Landscape Systems 460, 480, 485 | 9
- Select 2 from Plant Sciences and Landscape Systems 410, 427, 430, 434, 440, 450 or 493 | 6
- Plant Sciences and Landscape Systems 490, 492 | 4
- Botany 330 or Plant Sciences and Landscape Systems 421 | 3
- Environmental/Technical Elective | 3
- 1History Elective | 3
- 1Humanities Elective | 3

**Total** 124

1Lists of appropriate electives are available and should be selected in conference with an academic advisor. Students are required internship training in the area of their interest.

### Public Horticulture Concentration

The Public Horticulture concentration is intended for students interested in professional careers which promote horticulture and emphasize people and their education and enjoyment of plants. Such careers include director of a botanical garden or park; city or urban horticulturist; extension agent, teacher, educational director, or program coordinator; professional garden writer/editor or publication manager; horticulture therapist; public garden curator; and plant collections manager. Directed technical electives allow the student to concentrate in an area of their interest while encouraging the development of good people skills. Students are required internship training in the area of their interest.

### Requirements for the Bachelor of Science in Plant Sciences and Landscape Systems • Plant Sciences and Landscape Systems Major • Public Horticulture Concentration

<table>
<thead>
<tr>
<th>Freshman</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Botany 110-120</td>
<td>8</td>
</tr>
<tr>
<td>Chemistry 100 or 120</td>
<td>4</td>
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<td>English 101-102</td>
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<tr>
<td>Plant Sciences and Landscape Systems 110</td>
<td>3</td>
</tr>
<tr>
<td>1Natural Science Electives</td>
<td>4</td>
</tr>
</tbody>
</table>

**Sophomore**

- Select 2 from Plant Sciences and Landscape Systems 220, 230, 231, or 280 | 6
- Agriculture and Natural Resources 290 | 3
- Select 1 from Educational Psychology 210; Public Relations 270;
  - Recreational and Tourism Management 201;
  - Forestry Wildlife and Fisheries 211 or 250 | 3
- 1Social Science Elective | 3
- Environmental and Soil Sciences 210 | 4
- Speech Communication 210 or 240 | 3
- 1Humanities Elective | 3
- 1History Elective | 3

**Junior**

- Select 4 from Plant Sciences and Landscape Systems 330, 334, 340, 350, 360, 370, 380, 390, or 391 | 12
- Plant Sciences and Landscape Systems 326 | 3
- Select 1 from Philosophy 342, Agriculture and Extension Education 346, or Journalism 310 | 3
- Select 1 from Botany 309, 330; Entomology and Plant Pathology 313, 321, 410 | 6
- Select 1 from Technical Electives | 6

**Senior**

- Select 4 from Plant Sciences and Landscape Systems 410, 421, 427, 429, 430, 431, 433, 434, 436, 437, 440, 446, 450, 451, 460, 480, 485, 493, or 494 | 8-12
- Plant Sciences and Landscape Systems 490 and 492 | 4
- 1Social Science Elective | 3
- 1History Elective | 3
- Select 2 from Technical Electives | 6
- Unrestricted Electives | 6-11

**Total** 124

1Lists of appropriate electives are available and should be selected in conference with academic advisor. Students are encouraged to take some of the history and humanities courses at the 300- and 400-level. Three hours of the humanities or history electives must be a writing emphasis course.

### Turfgrass Management Concentration

The Turfgrass Management concentration is designed for the student desiring to pursue professions that include growing and managing turfgrasses used for golf courses, parks, athletic fields, sports complexes, and residential and commercial lawns. Careful selection of departmental courses and other electives in consultation with an academic advisor will prepare graduates for the career of their choice.
Requirements for the Bachelor of Science in Plant Sciences and Landscape Systems • Plant Sciences and Landscape Systems Major • Turfgrass Management Concentration

**Freshman**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Botany 110-120</td>
<td>8</td>
</tr>
<tr>
<td>Chemistry 100-110 or 120-130</td>
<td>8</td>
</tr>
<tr>
<td>English 101-102</td>
<td>6</td>
</tr>
<tr>
<td>Mathematics 119 and (123 or 125)</td>
<td>6</td>
</tr>
<tr>
<td>Plant Sciences and Landscape Systems 110 or 235</td>
<td>3</td>
</tr>
<tr>
<td>Social Science Elective</td>
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**Sophomore**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Plant Sciences and Landscape Systems 220, 230, 231, or 280</td>
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</tr>
<tr>
<td>Agriculture and Natural Resources 290</td>
<td>3</td>
</tr>
<tr>
<td>Humanities Elective</td>
<td>3</td>
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<tr>
<td>Social Science Elective</td>
<td>3</td>
</tr>
<tr>
<td>Environmental and Soil Sciences 210</td>
<td>4</td>
</tr>
<tr>
<td>Speech Communication 210 or 240</td>
<td>2</td>
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<tr>
<td>History Elective</td>
<td>3</td>
</tr>
<tr>
<td>Unrestricted Electives</td>
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**Junior**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Plant Sciences and Landscape Systems 334, 370, and 340</td>
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</tr>
<tr>
<td>Select 2 from Plant Sciences and Landscape Systems 330, 350, 360, 390, or 391</td>
<td>6</td>
</tr>
<tr>
<td>Select from Plant Sciences and Landscape Systems 492</td>
<td>3</td>
</tr>
<tr>
<td>Technical Electives</td>
<td>6</td>
</tr>
<tr>
<td>History Elective</td>
<td>3</td>
</tr>
<tr>
<td>Unrestricted Elective</td>
<td>3</td>
</tr>
</tbody>
</table>

**Senior**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select 2 from Plant Sciences and Landscape Systems 410, 421, 430, 431, 433, 434, 435, 450, 451, 460, 471, or 493</td>
<td>4-6</td>
</tr>
<tr>
<td>Plant Sciences and Landscape Systems 440 and 490</td>
<td>5</td>
</tr>
<tr>
<td>Technical Electives</td>
<td>6</td>
</tr>
<tr>
<td>Botany 321</td>
<td>4</td>
</tr>
<tr>
<td>Humanities Elective</td>
<td>3</td>
</tr>
<tr>
<td>Unrestricted Electives</td>
<td>7</td>
</tr>
</tbody>
</table>

**Total** 124

1Lists of appropriate electives are available and should be selected in conference with academic advisor. Students are encouraged to take some of the history and humanities courses at the 300- and 400-level. Three hours of the humanities or history electives must be a writing emphasis course.

Minor in Plant Sciences and Landscape Systems

Plant Sciences and Landscape Systems 110 or 235; one additional lower-division course; and a minimum of 12 credit hours at the upper-division. Plant Sciences and Landscape Systems 471 will not be accepted as a course to meet minor requirements. Prerequisites, if any, to these courses will not be waived, but must be included in addition to the total of 18 hours.

**Total** 18

ADDITIONAL ELECTIVES LIST FOR PLANT SCIENCES AND LANDSCAPE SYSTEMS MAJOR

**BUSINESS MANAGEMENT CONCENTRATION**

**Technical Electives**


**HORTICULTURE AND AGRONOMY CONCENTRATION**

**Technical Electives:** Agronomy Tract

- Agricultural Economics Elective (3); Biosystems Engineering Technology 212, 452, 462, Botany 310, 330; Environmental and Soil Sciences 324, 355, 434, 442, 444; Forestry, Wildlife, and Fisheries 250.

**Technical Electives: Horticulture Tract**

- Agricultural Economics Elective (3); Biosystems Engineering Technology 212, 452, 462; Botany 310, 412, 431, 451; Forestry, Wildlife, and Fisheries 250.

**Directed Electives for Sophomore Year:**

- **Agronomy Track:**
  - Microbiology 210 and Biology 240;
  - Horticulture Track:
    - Select 1 from Plant Sciences and Landscape Systems 220, 230, 231, or 280 and select 1 from Microbiology 210 or Biology 240

**Directed Electives for Junior Year:**

- **Agronomy Track:**
  - Environmental and Soil Sciences 462;
  - Horticulture Track:
    - Botany 330

**Directed Electives for Senior Year:**

- **Agronomy Track:**
  - Select 4 from Plant Sciences and Landscape Systems 431, 434, 435, and 453
  - Horticulture Track:
    - Select 4 from Plant Sciences and Landscape Systems 410, 430, 431, 433, 434, 440, 451 or 453

**LANDSCAPE DESIGN CONCENTRATION**

**Environmental/Technical Electives**

- Architecture 111, 180, 201, 213, 242; Art 101, 103, 191, 295; Art Drawing 211, 212; Biology 250; Biosystems Engineering Technology 202, 212; Botany 305, 306, 330, 431; Entomology and Plant Pathology 306, 313, 321, 410; Environmental and Soil Sciences 324, 334; Forestry, Wildlife, and Fisheries 211, 250; Geology 201, 202; Geography 310, 439; Planning 401, 402.

**PUBLIC HORTICULTURE CONCENTRATION**

**Technical Electives**

- Accounting 415; Art 481; Botany 431; Educational Psychology 210; Forestry 423; Interior Design 200; Philosophy 342; Environmental and Soil Sciences 355, 434; Public Health 410; Public Relations 470; Recreation and Leisure Studies 410, 430; Speech 440.

**PUBLIC HORTICULTURE AND LANDSCAPE DESIGN CONCENTRATION**

**Natural Science Electives:**

- Chemistry 110, 130; Geography 131; Geology 101, 103.

**TURFGRASS MANAGEMENT CONCENTRATION**

**Technical Electives**

- Agricultural Economics Elective (3); Biosystems Engineering Technology 202, 212, 452, 462, Environmental and Soil Sciences 324, 334, 462; Entomology and Plant Pathology 313, 321, 410.
Mission for the College of Architecture and Design

To See and Understand
To Envision and Create

The mission of the College of Architecture and Design is the education of future design professionals. A professional education is characterized by integrity and responsibility, and informed by knowledge and orientation.

Our College is brought together to promote and sustain the built and natural environments through the development of design skills and the pursuit of knowledge.

We are committed to the development of individuals with creative imagination, intellectual curiosity, and technical knowledge.

We educate students in the design disciplines who can form independent judgment grounded in the broader contexts of intellectual traditions.

The students and staff of the College of Architecture and Design strive to make the College a community of inquiry, energy, and excellence, integrating research, creative activity, public service, teaching, and learning.

Our College provides a design education that focuses on space, technology, and place.

Professional Accreditation

The College of Architecture and Design includes three basic, professionally accredited programs of study at the undergraduate and graduate level:

Bachelor of Architecture: A professionally accredited five-year undergraduate first professional degree program of study.

Bachelor of Science in Interior Design: A professionally accredited four-year undergraduate program of study.

Master of Architecture: A professionally accredited first professional degree for students from any academic background. This three-year course of study is described in the Graduate Catalog.

Accreditation for Architecture

In the United States, most state registration boards require a degree from an accredited professional degree program as a prerequisite for licensure. The National Architectural Accrediting Board (NAAB), which is the sole agency authorized to accredit U.S. professional degree programs in architecture, recognizes two types of degrees: the Bachelor of Architecture and the Master of Architecture. A program may be granted a five-year, three-year, or two-year term of accreditation, depending on its degree of conformance with established educational standards.

Master’s degree programs may consist of a pre-professional undergraduate degree and a professional graduate degree, which, when earned sequentially, comprise an accredited professional education. However, the pre-professional degree is not, by itself, recognized as an accredited degree. The University of Tennessee offers both the five-year Bachelor of Architecture and a three-year Master of Architecture for students with an unrelated bachelor’s degree.
The four year pre-professional degree, where offered, or other “architectural technology” degrees are not accredited by NAAB. The pre-professional degree is useful for those wishing a foundation in the field of architecture, as preparation for either continued education in a professional degree program or for employment options in architecturally related areas.

**Accreditation for Interior Design**

Most states require that an individual intending to become a licensed Interior Designer hold a professionally accredited degree. The University of Tennessee offers a four-year Bachelor of Science in Interior Design. It is professionally accredited by the Foundation for Interior Design Education and Research (FIDER), the sole agency authorized to accredit U.S. professional degree programs in interior design.

**Admission Requirements**

Due to the limited size of the design studios and College resources, admission to the College of Architecture and Design is highly selective, based on test scores, high school record, student application, and portfolio. In making its decisions, the College also requires a portfolio from applicants (see information below). Applicants will be informed of their status by April 15 of each year.

**Required Portfolio**

All applicants must submit a portfolio of personally produced graphic or visual work. The purpose of the portfolio is to demonstrate visual talent and abilities.

Aim for quality rather than quantity in selecting work: An ideal number would be eight to ten examples of personal work. All work shall be neatly assembled in an 8 1/2 x 11 portfolio or organized folder/notebook. Submittals not adhering to this size requirement will not be reviewed. The portfolio must include at least three items:

- a freehand drawing of a stair,
- a freehand drawing of a collection of leaves, and
- a freehand drawing of a bicycle.

The following guidelines have been established to assist applicants in selecting additional samples of personal work for the portfolio:

- Include other examples of drawings, artwork, photography, or anything else which may demonstrate visual abilities. Graphic, architectural or industrial design work may also be included.
- Include work for course assignments (if any) as well as work completed independently.
- Avoid extensive submissions of mechanically drafted drawings or computer drawings, unless these are illustrative of a design project.
- Submission of the original item is not necessary: inexpensively reproduced drawings, photographs, reductions, and photocopies are acceptable. Digital design work must be submitted as a hard copy. (Please, no slides or disks.)
- Label all work with name, date when work was executed, and media.

- The cover or cover page of the portfolio should include the student name, address, phone number, social security number, and the program to which the application is made (Architecture or Interior Design).

The 8 1/2 x 11 portfolio should be sent, with the application, to the Office of Admissions. It will be reviewed by members of the College Admissions Committee. In addition, include a self-addressed stamped mailer for the return of the portfolio. Otherwise, portfolios will not be held nor returned.

**Advice to High School Students**

High school students are encouraged to take physics, art, and calculus. Students enrolled in Advanced Placement courses should take the national AP exam. Extensive drafting, mechanical drawing or architecture courses based on drafting are not recommended.

**Transfer Students**

It should be noted that due to the strong sequential character of the curriculum, entry in any semester other than fall may be difficult. A course of summer study is usually offered which would allow transfer students to proceed to the second year course of study for the fall. Transfer students are required to submit a portfolio and to have at least a 2.3 grade point average to be considered. The average grade point average has been 3.5 for students accepted in recent years. Sophomores and juniors who are interested in applying to the architecture program may want to consider finalizing their bachelors courses of study and applying to the first professional Master of Architecture program in the College. Transfer students should apply by January 15, and should discuss their options with the Director of Student Services.

**Academic Policies**

**Advising**

Students must plan their schedule in consultation with an assigned faculty advisor. In addition, entering Architecture students will be assigned to an upper-class student who will serve as a peer advisor. The Director of Student Services is available to answer additional questions and to oversee questions related to admissions, advising, and career placement.

All academic policies of the College of Architecture and Design are summarized in the Student Handbook, published each year by the College and on the website.

**Course Load**

The average course load in any semester is 17 credit hours. The minimum which may be taken by full-time students is 12 hours. The maximum which may be taken without approval of the Dean is 19 hours.

**Satisfactory/No Credit Courses**

Courses that are a part of the specific requirements of the College cannot be taken as Satisfactory/No Credit.

Credit hours over and above the specific graduation requirements may be taken S/NC. A student who desires to take a course S/NC should indicate this at the start of registration. Courses evaluated as “Satisfactory” will count as hours toward graduation but will not be calculated in the student’s GPA.
The Study of Architecture

Architecture involves the study and transformation of the built environment, from the scale of furniture to the scale of the city. The goal of an architectural education is to develop a synthetic thought process of critical thinking and creative problem solving. Creative thinkers must address all aspects of the built environment, in its cultural, social, and ethical context.

As a professional discipline, architecture spans both the arts and the sciences. Students must have an understanding of the arts and humanities, as well as a technical understanding of structures and construction. Skills in communication, both visual and verbal, are essential. While knowledge and skills must be developed, the School strongly emphasizes a process of critical thinking and creative activity.

Bachelor of Architecture

The curriculum for the Bachelor of Architecture degree includes a combination of required and elective courses which offers the student both a solid professional program of study and a sound general education. While the majority of courses are designated as required, students may use the available architecture and general electives to broaden their education and to expand their knowledge in areas of personal interest.

All students studying for a Bachelor of Architecture degree will include the following requirements in their course of study. For any additional specialized requirements, the student should refer to the Student Handbook of the School of Architecture and the student’s faculty advisor.

Requirements for the Bachelor of Architecture

<table>
<thead>
<tr>
<th>First Year</th>
<th>Hours Credit</th>
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</thead>
<tbody>
<tr>
<td>Architecture 101, 102</td>
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<td>Architecture 121,122</td>
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<td>*Architecture 171,172</td>
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<td>*Architect 21</td>
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<td>English 101,102</td>
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<td>*Mathematics 125 or Elective</td>
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<td>*Electives</td>
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<table>
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<td>Architecture 212</td>
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<td>Architecture 231</td>
<td>3</td>
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<td>Architecture 232</td>
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<tr>
<td>*Architecture 271,272</td>
<td>12</td>
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<tr>
<td>Physics 101, 135,137, or 161</td>
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<table>
<thead>
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<th>Hours Credit</th>
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<td>Architecture 331,332</td>
<td>8</td>
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<tr>
<td>Architecture 341,342</td>
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<td>Architecture 371,372</td>
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<table>
<thead>
<tr>
<th>Fourth Year</th>
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<tr>
<td>Architecture 431</td>
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<tr>
<td>Architecture 471,472</td>
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<tr>
<td>*Electives</td>
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<tr>
<td>Architecture 462</td>
<td>4</td>
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<td>Architecture 480</td>
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<tr>
<td>*Design Course Option</td>
<td>12</td>
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<tr>
<td>*Electives</td>
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</tr>
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</table>

Total 171

1Students are not allowed to enroll simultaneously in two of these design courses.
2Electives consists of: 6 hours in Social Sciences, 6 hours in History, 12 hours in Architecture, 15 hours outside School of Architecture, 15 hours open/free electives. These may be taken in any order of preference.
3Two courses from the following Design Studio Options: Architecture 481, 482, 483, 484, 485, 486, or 489. 472 may be taken at any time in the last three semesters.
4Students are exempt from Mathematics 125 with a score of 25 or higher on the calculus readiness test.

Progression

Students must maintain an overall 2.3 grade point average by the end of 32 hours in order to maintain “full status” in the program. Delinquent students will be put on “temporary status” for one semester. These students will have one semester to raise the overall GPA to 2.3. If the GPA is not brought up to 2.3, the student will be dropped from the architecture program.

Students may advance to second year design (271) with satisfactory completion of the first year program (including math) with a grade point average of 2.3. Students may advance to third year design (371) with the completion of all first and second year courses. For 371 and all subsequent design courses, students must maintain a design grade point average of 2.3. Students must repeat the previous level design course(s) until the average is raised to 2.3.

300- and 400-level electives are open to all students who have the necessary prerequisites at any time.

Exceptions to academic policies may be made through petition, reviewed by the school’s Academic Standards Committee.

Special Programs in Architecture

The School of Architecture is committed to providing a variety of meaningful learning opportunities beyond the classroom itself. Lectures, panel discussions, films, symposia, and exhibits are all important components of a lively academic environment. Within the regular course of study, students have an opportunity to explore diverse aspects of architecture related to urbanism, historic preservation, and community service. Since its founding, the School has always sponsored a foreign studies opportunity.
Exhibits

The Ewing Gallery, in the Art and Architecture Building, hosts numerous exhibits related to art and architecture. Adjacent to the Commons Space is an Exhibition Wall for more informal exhibits of students, faculty, and visiting artists and architects. In the Commons itself are more spontaneous exhibits of current student work.

Field Trips

Throughout the year, various field trips are organized by the School. The purpose of the field trips is to expose students to major cities with important architecture and to works of architecture that may not normally be open to the general public.

Lectures, Films, and Videos

The Robert B. Church Memorial Lecture Series is an annual endowed gift in memory of a former dean of the School. Over the years, the Church lecture series has allowed the School to bring prominent architects to Tennessee. The regular lecture series features architects, artists, theorists, planners, and historians who discuss their work and ideas. Films and videos also introduce students to a wide range of issues related to architecture, art, urbanism, and culture. Every spring, General Shale Corporation hosts a lecture as part of The Annual Architecture Spring Thing (TAAST), a traditional series of events organized by the students.

Publications

Students in the School periodically publish The University of Tennessee Journal of Architecture. The Journal has a different theme each year, but typically includes articles related to current thinking in the field, as well as student work.

Special Topic Design Studios

Since 1981, architecture students at the Urban Design Center in Chattanooga have had the opportunity to contribute to the evolving urban identity of Chattanooga by working with city leaders on various strategic sites for future development in the city. The visionary work of the Urban Design Center is recognized nationally as a wonderful example of how teaching, creative work and community service can be combined as a meaningful learning experience for advanced students.

Interdisciplinary design studios are available to upper class students. A very popular studio of Historic Preservation unites Interior Design students with Architecture students who collaborate together on projects of historical significance for different communities.

In 1997, The University of Tennessee College of Architecture and Design and the University of Arkansas College of Architecture formed the Memphis Center for Architecture. This is a spring semester course of study for advanced design students in Architecture, Landscape Architecture, and Interior Design. One important goal of this Memphis Center for Architecture is to provide a bridge to the very strong professional community in Memphis, with opportunities for lectures, exhibits, reviews, continuing education, and summer internship arrangements.

During the summer, students may elect to participate in different programs sponsored by The University of Tennessee College of Architecture and Design. Furthermore, students may also participate in summer programs sponsored by other accredited architecture schools. Students will receive appropriate college credit, which may lead to advance standing within the program.

Opportunities for Foreign Study

Students in their fourth year of study may elect to spend one semester studying abroad in a program, organized either by The University of Tennessee or by other accredited architecture programs. Since 1988, the School has had a very successful exchange agreement with the University of Krakow in Poland.

In cooperation with Danish International Studies, a program is regularly offered in Copenhagen which attracts architecture students from around the world. The University of Tennessee is involved in a recently established International Studies at the Bauhaus University in Weimar. The University also has an exchange agreement with the Royal Melbourne Institute of Architecture in Melbourne, Australia, with Chongqing Institute of Architecture and Engineering in Sichuan Province, China, and with the University of Frankfurt in Germany.

During the summer, many different summer programs abroad sponsored by other architecture schools are available to University of Tennessee students for transfer credit. Students are encouraged to seek new educational experiences.

The Profession's Participation in the School

As the only accredited architecture program in the state, the School of Architecture tries to maintain a close relationship with the architectural community of the city, state, and region. Professionals regularly come to the school to attend and respond to student presentations, to conduct workshops, to participate in School events, and to interview graduating students. Every spring, the architecture community of Knoxville attends an exhibit of graduating students’ work, where students have the opportunity to discuss their work with practicing architects.

Architecture, is a broad field of study, with many diverse ways for individuals to become involved in the profession. The profession itself is diversifying and changing rapidly, due to changing financial structures, increasing specialization, expanding liability, and evolving electronic technology. Students are strongly urged to visit and work in different architectural offices, in order to acquire a better sense of the profession and career commitment.
INTERIOR DESIGN PROGRAM

Professors
A. DeLong, Ph.D. Pennsylvania State; J. Rabun, Ph.D. Tennessee

Associate Professor
M. Robinson, M.S. Design, Massachusetts

The Study of Interior Design

Interior design involves the study and transformation of the environment, at the human scale. Interior designers understand how the design of furnishings, function, and space can improve the quality of life. As licensed professionals, interior designers analyze complex design challenges involving interior construction and technical considerations related to issues such as lighting, acoustics and mechanical systems. Their designs must meet code issues involving fire, electricity, structure, occupancy and materials. Interior design is broader than interior “decorating” which focuses primarily on furniture and finishes.

In designing the micro-environment for specific functions or programs, interior designers are knowledgeable about how users experience space. Interior designers understand how each detail of a design affects the overall concept.

The goal of an education in interior design is to develop a synthetic thought process of critical thinking and creative problem solving, while building technical knowledge and an understanding of the human environment. Creative thinkers, in architecture and interior design, must address all aspects of the built environment in its cultural, social, and ethical context.

The University of Tennessee Interior Design Program is professionally accredited by the Foundation of Interior Design Education Research (FIDER.) All graduates, with sufficient internship experience after graduation, are eligible to take the National Council for Interior Design Qualification exam (NCIDQ exam).

Bachelor of Science in Interior Design

The Interior Design curriculum is a rigorous course of study which combines technical courses, design studio courses, humanities, and a wide choice of electives. Through coursework and field study experiences, students develop specialized problem solving skills and knowledge for the analysis, planning and design of interior architectural environments. They apply the use of lighting, color, mechanical systems, and furnishings as they design spaces for both residential and commercial settings.

Beyond the professional core, students are encouraged to pursue interests related to horticulture, theater design, historic preservation, business, or other personal interests.

Requirements for the Bachelor of Science in Interior Design

First Year

<table>
<thead>
<tr>
<th>Course</th>
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<tr>
<td>Interior Design 141, 171</td>
<td>5</td>
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<tr>
<td>English 101, 102</td>
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<tr>
<td>Mathematics 119</td>
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<tr>
<td>Psychology 201</td>
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Second Year

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<tr>
<td>Architecture 231</td>
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<tr>
<td>Art 172, 173</td>
<td>6</td>
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<td>Physics 161 and one other Natural Science</td>
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Third Year

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<tr>
<td>Materials Science and Engineering 220</td>
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Summer (ID 420)

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Fourth Year

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<tr>
<td>Interior Design 400, 471, 472, 480</td>
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<tr>
<td>Elective (Art)</td>
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<tr>
<td>History Elective</td>
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<td>Elective</td>
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</table>

Bachelor of Science in Interior Design

Total 135-136

Progression and Retention

Upon admission to The University of Tennessee and the College, students may begin the ID major. Progression into third year occurs after completion of ID 272.

- For progression into third year, students must meet the following criteria:
  1. Cumulative grade point average of 2.3 or greater.
  2. Cumulative grade point average in the major of 3.0 or greater in the following ID courses: 141, 171, 200, 221, 271, 272, 231, 261, with no grade below a C.
  3. Portfolio Review accepted by faculty.
  4. Successful interview following completion of ID 272.

- For retention, student must meet the following criteria:
  1. Before enrolling in any ID course, a grade of C or better must be made in each prerequisite required ID course.
  2. Cumulative grade point average of 2.3 or greater.
  3. Grade of I, must be removed before registration for next ID course.

- For graduation from the Interior Design program, students must meet the following criteria:
  1. Grade of C or better in all ID courses.
Special Programs in Interior Design

**Required Summer Internship**
All interior design students are required to have a professionally based summer internship. The faculty will help students find appropriate placement, as well as monitor the student’s progress in the internship.

**Professional Community’s Involvement**
As the oldest accredited interior design program in the state, the Interior Design program tries to maintain a close relationship with the interior design community of the city, state, and region. Professionals regularly come to the school to attend and respond to student presentations, to conduct workshops, to participate in school events, and to interview graduating students.

**Field Trips**
All Interior Design students regularly participate in a variety of field trips to important works of design as well as to Interior Design conventions and product shows.

**Opportunities for Foreign Study**
Students in their fourth year of study may elect to spend one semester studying abroad in a program, organized either by the University of Tennessee or by other accredited architecture programs. In cooperation with the Danish International Studies, a program is regularly offered in Copenhagen that attracts interior design students from around the world.

**Advanced Credit for Graduate Study in Architecture**
The College has also developed an innovative “overlap” program for qualified interior design students, allowing them to take selected courses in the architecture program and receive one year of advance standing in the first professional Master of Architecture program. With two years of additional study following the receipt of the B.S. in Interior Design, these students can also receive the M. Arch. degree. Students interested in this course of study should be meet with their faculty advisor to plan their course of study.
The College of Arts and Sciences is home to a wide array of academic disciplines and interdisciplinary programs. Such diverse areas of study as Computer Science and Classics, Anthropology, Women’s Studies and Latin American Studies are represented among the twenty-six departments and schools and thirteen special programs that compose the College.

The faculty of the College are committed to providing both comprehensive general education and concentrated study in a particular field to all students enrolled at The University of Tennessee. General education offers opportunities to master the basic learning skills necessary to understand a specialized area of study and is essential for the continuation of learning throughout life.

Arts and Sciences faculty are also committed to educating students in a discipline. Education with a disciplinary focus prepares students for further study at the graduate level and for careers in business, public service, or any other endeavor. As our world becomes both more specialized and more changeable, the need to find the right balance between general and specialized knowledge becomes essential.

The central purposes of a liberal education include the encouragement of intellectual tolerance, a dedication to the quest for knowledge as a worthwhile goal in and of itself, and the cultivation of a responsible, creative, individual mind. These qualities enable one to develop an ability to reason and to express oneself clearly, an incentive to absorb emerging knowledge, and a competence to confront the uncertainties of human experience. For the student whose interests and talents lead into research, scholarship, and teaching, a liberal education provides an invaluable foundation. For the individual who enters business, industry, the professions, or government service, it furnishes a broadly useful and well-rounded educational background. For all, it offers the opportunity to share in a rich intellectual heritage, in the adventures of the mind, and in the life of the educated imagination. A liberally educated person is identified not so much by specific knowledge as by quality of mind and by creative response to the challenges of the times.

The great universities of the world are so labeled because their faculties have earned the reputation of being renowned scholars. The University of Tennessee has earned such a reputation because of the quality of the research and creative activity of its faculty. The student who studies in the College of Arts and Sciences has joined a community of scholars. To study with such a talented faculty is to experience the best education possible.

The faculty of the College of Arts and Sciences provide to all students a general education and to thousands of students a year a more specialized education in any one of twenty-six disciplines and thirteen or more interdisciplinary programs. The College’s faculty help their students prepare for any and all careers. Faculty research and creative activity are the foundations on which education in this College is built. As a result of that faculty endeavor, the lives of students are enriched and the world’s body of knowledge grows. That is the basic mission of the College of Arts and Sciences faculty in a research university.

**Programs of Study**

Seeking the broad, general goals of a liberal education, students come into the College also with a wide variety of specific educational and vocational objectives. Recognizing this diversity, the college offers a number of different programs of study leading to the baccalaureate degree and also several pre-professional curricula which prepare students for advanced study but do not lead to a degree from this College.
Degrees Offered

BACHELOR OF ARTS

The Bachelor of Arts represents the attainment of a broad knowledge of the arts and sciences as well as a comprehensive understanding of one or more areas of special interest. Three programs leading to this degree are open to the student.

Basic Program

The program appropriate for most Bachelor of Arts students is developed around the basic skills and distribution requirements plus intensive study in one or more of the specified departmental or interdepartmental major fields described below.

Individualized Program

Designed for students whose educational goals are best met by a program tailored to their particular needs, it is the same as the Basic program in broad area requirements but permits the student to develop an individual concentration incorporating work in two or more departments.

College Scholars Program

Intended for a limited number of students who are especially qualified and motivated and who have been selected to undertake this honors program, the College Scholars Program permits the students maximum freedom to design a curriculum to meet particular interests and goals.

BACHELOR OF SCIENCE

The Bachelor of Science degree, offered in selected departments and programs, is designed for students who wish to pursue a more scientifically or professionally oriented program of study. Three programs leading to this degree are offered.

Basic Program

The Basic Program for the Bachelor of Science degree contains basic skills and distribution requirements similar to the Basic Program for the Bachelor of Arts as well as a unique set of requirements for the major including additional study in mathematics, statistics, or laboratory sciences.

Pre-Professional Program

The Pre-Professional Program is offered for those who wish to participate in the cooperative 3+1 curricula in the health sciences (medicine, dentistry, pharmacy, physical therapy, veterinary medicine, or nuclear medicine technology). Students taking one of the health sciences curricula proceed directly to specialized training in the chosen area after the third year of Arts and Sciences study and complete the first year of professional study in lieu of satisfying the requirements for the Bachelor of Science degree with a major concentration in the College.

Bachelor of Science in Chemistry

See Department of Chemistry.

BACHELOR OF FINE ARTS

See School of Art.

BACHELOR OF MUSIC

See School of Music.

Requirements for Degrees

To earn a Bachelor of Arts or Bachelor of Science degree, these requirements must be completed:

- All University degree requirements as described in the section “Academic Policies and Procedures: General Requirements for a Bachelor’s Degree”;
- A minimum of 124 credit hours;
- At least 42 credit hours in courses numbered 300 or above;
- Appropriate work to satisfy basic skill and distribution requirements, counting no course in more than one area. (This is not a requirement in the College Scholars Program);
- Completion of at least one major (24-40 credits at 200 level or above for Bachelor of Science major and 24-37 credits at 200 level or above for Bachelor of Arts majors); up to 6 hours in the major may be used, where listed, to satisfy basic skills or divisional distribution requirements. Courses used for the major may not be used to satisfy upper level distribution requirements.

Students may choose to develop one or more minors (minimum 15 hours at the 200-level and above).

Students may take up to 20 hours of courses graded Satisfactory/No Credit in an area outside the major or minor, basic skills or distribution requirements.

Satisfactory/No Credit

A few courses in the College are offered only on a Satisfactory/No Credit (S/NC) basis and students may elect to take others on this basis, except in areas where the option is specifically prohibited. Such courses, if successfully completed, will count as hours for graduation although neither S nor NC grades will be calculated in the student’s grade point average. Satisfactory is defined as C or better work on the traditional grading scale and No Credit is defined as less than C. The following regulations apply:

- S/NC courses, except those offered only on this basis, may not count for Basic Skills or Distribution Requirements or major and minor requirements unless specifically permitted by petition. This restriction applies also to major or minor prerequisites or corequisites.
- The maximum number of S/NC elective hours which may be counted toward graduation is 20, exclusive of courses offered only S/NC, physical education courses, and/or satisfactory hours earned by examination, military service, etc.
- A transfer student with S/NC or equivalent credit earned prior to admission to The University of Tennessee in a course which satisfies a Basic Skills or distribution requirement may count it for that purpose. In the case of a course which satisfies a major or minor requirement, statement (1) applies.

The option of taking courses on a S/NC basis is provided to encourage the able student to venture beyond the limits of those courses in which the student does well and, motivated by intellectual curiosity, to explore subject matter in which performance may be somewhat less outstanding than work in preferred subject fields.

Note: Students planning to seek admission to graduate or professional schools (especially in the health sciences) should discuss with their advisors possible limitations on exercise of the S/NC option before registering for courses on this basis.
**Programs Leading to Bachelor of Arts and Bachelor of Science Degrees**

The Bachelor of Arts and the Bachelor of Science Degrees share the same program of Basic Skills and Distribution Requirements (except where noted otherwise).

**BASIC SKILLS REQUIREMENTS**

All students who earn a degree in the College of Arts and Sciences must have demonstrated skill in the use of the English language, the ability to acquire another language, and the ability to use the tools of quantitative analysis or formal logic. The specific requirements are as follows:

**English Composition**

Skills necessary to write persuasive, logical and coherent essays in English; to read critically texts from a variety of media; to evaluate and cite sources in research; and to be aware of how to write for different audiences and purposes.

Students may meet this requirement in one of two ways:

- By completing six credits in English writing course—either English 101 and 102; or English 118 and English 102; or English 131 and 132. Students who obtain a grade of A or B in 118 may complete their freshman requirement with 102, or with a sophomore literature course in the English Department, or English 355. The sophomore literature course may, if so listed, also be used toward the Humanities distribution requirement.

- By earning a score of 4 or 5 on the College Board Advanced Placement Test in Literature and Composition. Credit in English 101 is earned with a score of 4 or 5 on the Advanced Placement Test in Language and Composition.

**Placement Information:** Eligibility for English 118 will be determined by ACT or SAT scores and a placement exam. Selected students will be placed in English 103 based on ACT or SAT scores and may not drop this course without departmental approval. Details available from the English Department.

A student must complete the English Composition requirement prior to enrolling in English courses numbered 200 or higher.

**Foreign Language**

Skills necessary to learn the basic structures and vocabulary of a foreign language; to read, write, understand, and, for modern languages, speak a foreign language; to understand how to learn another language; to better understand one’s own native language; and to complement the study of other cultures or civilizations.

Students may meet this requirement in one of three ways:

- Completion of the intermediate level sequence of a foreign language. Any one of the following sequences will satisfy the requirement: Asian Languages 231-232 or 251-252; Asian Studies 221-222, 241-242, or 261-262; French 211-212 or 217-218; German 201-202; Greek (Classics) 261 and 264; Italian 211-212; Latin (Classics) 251 and 252; Portuguese 211-212; Russian 201-202; Spanish 211-212 or 217-218.

- Demonstration of competence on a departmental placement or proficiency examination or by AP or CLEP credit.

- Students whose native language is not English may satisfy the requirement with English 131 and 132 and any two courses from List A: Literature under the Humanities Distribution Requirement.

**Placement Information:** All students who wish to enroll in a French, German, Latin or Spanish course, who have completed at least two years of this language in high school, and who have not yet taken a college course in the language must take a placement examination before enrolling. Placement in the appropriate course will be determined by the score on the examination. Examinations will be given during Summer Orientation and at designated times during the fall, spring and summer. Students who place into 200-level courses will receive six hours of elementary language credit, provided that they do not subsequently enroll and receive credit for any 100-level course in the same language. If they do, elementary placement credit is forfeited and removed from the student’s transcript. Students who place into 300-level courses will receive six hours of intermediate language credit. Under no circumstances may any student earn more than six hours of language placement examination credit. Students who feel they have been inappropriately placed should consult the appropriate language section.

**Mathematics, Formal Reasoning, and Logic**

Skills in Mathematics, formal reasoning and computing required for estimation and calculation, understanding logical processes, critical analysis, problem solving and decision making.

Students may meet this requirement by completion of one of the following courses or by selecting two math courses under Natural Science List B:

- Any course in Mathematics numbered 110 or higher; Computer Science 100; Philosophy 130, 135.

**DISTRIBUTION REQUIREMENTS**

All of these requirements are designed to enhance the skills of thinking critically and analytically, and of effective communication and writing through study and use of different kinds of human knowledge. The distribution requirements are in two parts. Part A: Divisional Distribution Requirements, which require students to take courses in the various divisions of the College, and Part B: the Upper-Level Distribution Requirements.

**PART A: DIVISIONAL DISTRIBUTION REQUIREMENTS**

**Natural Science**

A two-course laboratory sequence and an additional two-course sequence that will introduce students to the increasingly important role of science and technology in all aspects of modern life. This requirement will introduce students to the basic discoveries, knowledge and logical organization of scientific disciplines and to development and testing of hypotheses. Laboratory courses will develop skills in experimental tests of hypotheses; lectures will introduce students to the role of scientific methodology and problem-solving in society.

Students may meet this requirement by completion of a two-course sequence from List A and an additional two-course sequence or package from List A or List B.

**List A**

- Astronomy 161-162, 217-218; Biology 101-102, 130-140; Botany 110-120; Chemistry 100-110, 120-130, 128-138; Geography 131-132; Geology 101 and either 102 or 103; Geology 107-108 (Students who earn an A in 101 or a B or better in 107 may take 108.); Physics 135-136, 137-138, 221-222.
**List B:**

Anthropology 110, 210; Astronomy 151-152; Botany 306 (Same as Anthropology 306) and either 309, 310, or 330; Chemistry 150-160; Computer Science 102 and either 140 or 160; Geology 201, 202, 203 (any two); Mathematics (any two Mathematics courses numbered 110 or higher); Microbiology 210 and BCMB 230; Physics 101-102; Statistics 201 and any Mathematics course numbered 110 or higher except Mathematics 115. (If Mathematics 115 is used to satisfy Basic Skills or Natural Science requirements, Statistics 201 may not be selected to meet this requirement.)

**SOCIAL SCIENCE**

Courses that will introduce students to the idea of individuals in societies, to perspectives and methods used by social scientists, and to the uses of these perspectives and methods in thinking about current social, economic and political issues and problems.

Bachelor of Arts students may meet this requirement by completion of four courses selected from the list below. These courses must be from two departments. Bachelor of Science students must complete two courses from two different departments.

- African and African-American Studies 201, 202, 310; Anthropology 120, 130, 362; Audiology and Speech Pathology 320; Botany 305; Economics 201, 207; Educational Psychology 210, Geography 101, 102, 320, 323; Human Services 220; Linguistics 200; Music History 290, 310; Political Science 101, 102, 107; Psychology 110, 117, 220, 360; Religious Studies 232, 301; Sociology 110, 117, 120, 127, 232, 250, 344, 370; Speech Communication 100, 220, 260, 330; Women’s Studies 220.

**HUMANITIES**

Courses that will provide skills to appreciate and interpret literary, philosophical, or religious texts, and to participate as an appreciative observer or artist in a discipline within the visual, spatial, musical, theatrical, or written arts.

Bachelor of Arts students may meet this requirement by completion of three courses, of which at least one must be selected from List A and one from List B. Bachelor of Science students must complete a minimum of two courses; not more than one course may be taken from List C. All courses except those involving practice of the arts are writing-emphasis courses.

Writing-emphasis courses require at least 2,000 words, normally comprising one sustained essay or report of at least 1,000 words plus additional writing assignments such as in-class essay exams, journals, book reviews, etc. The purpose of the requirement is to help students (a) learn course materials through writing; (b) develop critical thinking skills; (c) demonstrate the ability to sustain an argument; and (d) strengthen existing writing skills.

**List A: Literature**

- African and African-American Studies 233; Asian Languages 311, 312, 313, 314; Classics 253; Comparative Literature 202, 203; English 201, 202, 221, 222, 231, 232, 233, 251, 252, 253, 254; Information Sciences 330; Italian 401, 402; Medieval Studies 261, 262; Religious Studies 312, 313; Russian 221, 222; Women’s Studies 210, 215.

**List B: Philosophical and Religious Thought**

- Classics 201, 221, 222; Philosophy 110, 111, 240, 342, 344, 345, 346, 382; Religious Studies 101, 102, 321, 322, 344, 345; Women’s Studies 382

**List C: Study or Practice of the Arts**

- Architecture 111; Art 191; Classics 232, 233; English 263; Music History 110, 115, 120, 125; Philosophy 350, 353; Speech Communication 280; Theatre 100, 220; Women’s Studies 330

**NON-U.S. HISTORY**

A two-course sequence to enhance appreciation of the diversity of the world’s societies, their cultures, and histories. This requirement will develop understanding of how the past shapes individuals and communities in practical decisions and in understanding of self and world; will contribute to skills in explaining change and continuity of human society and the interpretation of people, events and trends in context of the ideas, values, social and political conditions that affect them.

Students may meet this requirement by completion of one of the following sequences. All courses are writing-emphasis courses.


**PART B: UPPER LEVEL DISTRIBUTION REQUIREMENTS**

Courses that use skills and knowledge acquired in the Basic Skills and Divisional Distribution areas to understand and analyze a highly interdependent world system and to make informed comparisons among contemporary cultures. These courses develop understanding of U.S. society, of national and international diversity, and of critical issues of the modern world.

Bachelor of Arts students may meet this requirement by completion of two courses from one of the lists below and a third course from either of the other lists. Bachelor of Science students must complete two courses from two of the three lists. All courses are writing-emphasis courses.

**List A: United States Studies**

- African and African American Studies 315, 343, 352, 364, 429, 480, 483; American Studies 310, 312, 334, 355, 423, 469; Anthropology 305, 310, 312, 315, 320, 321, 360, 363; Art History 471, 472, 473, 483; Ecology and Evolutionary Biology 305; Economics 413, 435, 462, 471, 472; English 331, 332, 333, 334; Geography 361, 363, 365, 366, 423, 441, 443; Geology 381; History 350, 351, 441, 442, 446, 451, 453; Legal Studies 330, 340, 455, 469; Philosophy 390; Political Science 311, 312, 330, 374; Psychology 434; Religious Studies 351, 352, 355; Sociology 310, 340, 434, 455; Speech Communication 450, 466, 469, 476; Women’s Studies 310, 332, 340, 434, 453, 466, 476, 483.

**List B: Foreign Studies**

This list is subdivided by geographic area and topic. If Western Civilization (History 241-242) or Medieval Civilization (Medieval Studies 201-202) is used to satisfy the non-United States History divisional requirement, courses from the European concentration may not be used to satisfy this requirement.

In addition to the courses listed here, this requirement may be satisfied by literature courses taught in Chinese, French,
German, Greek, Hebrew, Italian, Japanese, Latin, Portuguese, Russian, Sanskrit, or Spanish. Literature courses in English translation will not meet this requirement.

**Africa**

African and African-American Studies 371, 372, 373, 379, 381, 421, 452; Anthropology 373; Art History 461, 462, 463; Geography 379; History 371, 372, 381, 421; Political Science 452; Religious Studies 373.

**Asia**

Art History 411, 415, 416, 419; History 362, 363, 364, 365; Philosophy 374, 376, 379; Political Science 454; Religious Studies 374, 376, 379, 383, 474.

**Europe**

Anthropology 462; Art History 425, 431, 441, 442, 451, 452, 453, 454, 475, 476; Cinema Studies 323, 325, 420, 421; Classics 331, 334, 381, 382, 383; English 301, 302, 401, 422; French 420, 431, 432; Geography 371; German 323, 350, 363; History 319, 320, 323, 429, 432, 490; Italian 414, 421; Judaic Studies 350; Medieval Studies 372, 382, 403, 405; Philosophy 320, 322, 324, 326; Political Science 361, 459; Russian 325, 371, 372; Women’s Studies 383, 422, 432.

**Latin America**

African and African-American Studies 319; Anthropology 313, 316, 319; Cinema Studies 434; Geography 372, 373; History 360, 361, 460, 461, 462, 463, 475; Latin American Studies 313, 314, 319, 331, 360, 361, 372, 373, 401, 456, 460, 461, 462, 463, 475; Political Science 456; Spanish 331, 401, 434, 489.

**Middle East**


**Critical Issues in Foreign Studies**

African and African-American Studies 442; Economics 323; Geography 345, 351; History 374, 375, 395, 484; Judaic Studies 395, 484; Political Science 350, 365; Sociology 360, 442, 446, 465; Women’s Studies 360.

**CAPSTONE COURSES**

These courses are offered within major fields and are designed to provide an integrative experience to broaden comprehension of the major field, to enhance understanding of how the field has and continues to influence society, and to draw attention to ethical considerations applicable to the field. As writing-emphasis courses, the capstones promote development of written communication skills used by the major field. It is recommended that this option be satisfied during the senior year.

If used to satisfy the major requirement, these courses may not be used to satisfy the distribution requirement.

African and African-American Studies 431; Audiology and Speech Pathology 499; Biochemistry and Cellular and Molecular Biology 409, 420; Botany 471; Chemistry 405; Computer Science 411; Ecology and Evolutionary Biology 409; Economics 499; English 499; French 440; Geography 499; Geology 440, 475; History 482; Human Services 430; Mathematics 411, 400; Microbiology 495; Music History 460; Physics 401; Psychology 430, 496; Urban Studies 460.

**AREAS OF CONCENTRATION**

**Required Major**

Requirements for specific majors vary by program and are discussed under each department or program. A major consists of at least 24–40 credit hours in courses numbered 200 or above as specified by the department or program. Up to 6 credit hours taken in the major may also be used to satisfy basic skills or divisional distribution requirements where listed. In addition, students making A or B in English 118 may use a 200-level literature course in the English Department to satisfy both the second half of their Basic Skills English Composition requirement and part of their Humanities requirement if the course is listed there. A minimum grade of C must be earned in every course counted as part of a major. Students transferring from other institutions must complete at least 9 credit hours at The University of Tennessee in each major awarded on this campus. Students may elect as many courses as desired in any department or program. In lieu of a major, students may develop an Individualized Program (described below). Majors available in the Basic Program for a Bachelor of Arts or Bachelor of Science include: Anthropology, Art, Art History, Audiology, Biological Sciences, Chemistry, Classics, Computer Science, Economics, English, French, Geography, Geology, German, History, Interdisciplinary Programs, Italian, Mathematics, Music, Philosophy, Physics, Political Science, Psychology, Religious Studies, Russian, Sociology, Spanish, Speech Pathology, Statistics, and Theatre.

**Optional Multiple Majors**

After the general requirements of basic skills, distribution and a major have been satisfied, additional majors may be recorded on the transcript without regard to course overlap among majors or among the additional majors and Basic Skills and Distribution Requirements. Students developing multiple majors must declare this intent at the time of application for graduation. Once a student has graduated, the establishment of additional majors becomes subject to University second degree requirements.

Students who satisfy the requirements of a degree in a college other than Arts and Sciences may also major inside the College of Arts and Sciences with the approval of the degree-granting unit. These students need complete only the major requirements, not the Basic Skills or Distribution requirements for Arts and Sciences degrees. The Arts and Sciences major may also be listed on the student’s transcript.

**Optional Minors**

At the time of application for graduation, single or multiple minors may be recorded on the academic record without regard to course overlap among minors and major or among minors and Basic Skills and Distribution requirements. Students who satisfy the requirements of a degree in a college other than Arts and Sciences may also minor inside the College of Arts and Sciences with the approval of the degree-granting unit. The minimum requirement for a minor is 15 credit hours in courses numbered 200 or above. Minors are available in most departments or programs in which majors are offered, and also in Astronomy, Portuguese, Chinese, Japanese, and Cinema Studies. Minors may be developed in other colleges or schools of the University, but must be approved by the head of the department in which the minor is proposed and by the Associate Dean for Student Academic Affairs in Arts and Sciences. At least six of the 15 credit hours required for a minor must be completed at The University of Tennessee.
Business Minor for Non-Business Students

Requirements include the following courses: Accounting 201-202, Business Administration 201, Economics 201, Statistics 201, Finance 301, Marketing 300, and Management 300. All upper division (300 level or above) coursework must be taken at The University of Tennessee, Knoxville. Students are responsible for meeting all prerequisites for upper-division courses taken in a particular concentration.

Supplementary Elective Courses

At least one-fourth of each student’s curriculum in the Basic Program will be made up of courses selected according to the individual’s interests to supplement and support the work being done in the major and Basic Skills and Distribution requirements. This dimension of the student’s experience at the University represents that freedom within which total education may be rounded out and enriched. Elective courses should be chosen with care so that they will truly enhance the student’s total program and help in the achievement of well thought-out educational objectives.

Some of the choices which the student might make in selecting the elective courses are additional courses in the major field; a related minor; an area in the arts; an off-campus semester.

Only the student’s imagination and initiative and the willingness to conceive and develop a meaningful academic program limit the choices of supplementary elective courses.

Individualized Program

The Basic Program described above will meet the educational needs of most students enrolling in the college. Some, however, come with particular strengths in their preparation or with special interests which do not coincide with the departmental or interdepartmental majors specified in the Basic Program. For these students, the Individualized Program has been established as a means of attaining a closer correlation between student needs and academic programs.

Students in the Individualized Program will satisfy all the Basic Skills and Distribution Requirements, just as do those in the Basic Program. The point at which the individualization takes place is in the area of concentration. The quantitative aspect of the area of concentration is the same as for the major in the Basic Program (i.e., a minimum of 24 hours in courses numbered above 200), and at least two-thirds of the courses must be selected from disciplines within the College of Arts and Sciences. The student may design a program in consultation with an advisor and submit it for consideration to the Committee on the Individualized Program. The proposed courses of study must have some clear central purpose, usually implemented through intensive work in two or three departments; an undirected scattering of courses will not be approved. For further information contact Arts and Sciences Advising Services.

College Scholars Program

A limited number of freshmen and sophomores, entering transfer students with fewer than 42 credit hours, and resident students with fewer than 62 credit hours are invited each year to enter this distinguished honors curriculum. Selection is based on previous academic record, test scores, recommendations, a written essay, and a personal interview. Admission is provisional for two semesters; continuation depends upon maintenance of a satisfactory record (normally 3.25 or above) and evidence of ongoing motivation and interest.

The College Scholars Program affords the highest degree of freedom to the student in developing a meaningful curriculum. Each program is worked out individually with a special advisor (mentor) who under ordinary circumstances continues to advise the student throughout the college career. Together they determine what kinds of course work and/or other learning experiences will best fulfill the student’s objectives, while at the same time achieving the kind of liberal education the college believes is important for every student. In the final two years of the program, students will be heavily involved in independent study or research required of all College Scholars. When College Scholars fulfill departmental requirements for additional majors or minors, these will be recorded on the Scholars’ transcripts. Scholars will not be required to meet Basic Skills or Distribution requirements in order to have such majors or minors officially recognized.

Further information and applications may be obtained from Arts and Sciences Advising Services.

### Pre-Pro Fessio N A L PR O GR AM S MAJOR

#### Pre-Dental Concentration

The college offers both a three-year program leading to a Bachelor of Science degree and a four-year program leading to a Bachelor of Arts or Science degree for students preparing for the study of dentistry. Both programs are based upon the curriculum outlined below. In the three-year program the student must complete at least 93 credit hours while enrolled in the college, and the Bachelor of Science degree is granted upon satisfactory completion of the first year of study at UT Health Science Center, Memphis. In the four-year program the degree is granted upon completion of 124 or more credit hours while enrolled in the college, including a major of 24 or more hours in addition to the courses listed below. The requirement for a major is waived for those completing their fourth year at UT Health Science Center, Memphis. Students in either the three- or four-year program must complete the last 30 hours of credit in residence at The University of Tennessee before entering UT Health Science Center, Memphis.

Although the Bachelor of Arts or Bachelor of Science degree is not required for admission to the College of Dentistry at Memphis, most of the students accepted into the study of dentistry have the baccalaureate degree before admission. Therefore, pre-dental students are encouraged to plan to complete all requirements for the Bachelor of Arts or Bachelor of Science degree before enrolling in the College of Dentistry.

#### Requirements for the Bachelor of Science • Pre-Professional Programs Major • Pre-Dental Concentration

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Hours</th>
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<td>Electives</td>
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<td>3</td>
</tr>
<tr>
<td>Sophomore</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4Foreign Language (Intermediate-Level Sequence)</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>Chemistry 350, 360, 369</td>
<td></td>
<td>8</td>
</tr>
<tr>
<td>Physics 221,222</td>
<td></td>
<td>8</td>
</tr>
<tr>
<td>4*Humanities</td>
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</tr>
<tr>
<td>Non-U.S. History</td>
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<td>6</td>
</tr>
<tr>
<td>4*Electives</td>
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<td>3</td>
</tr>
</tbody>
</table>
Pre-Medical Concentration

The college offers a three-year program leading to a Bachelor of Science degree and a four-year program leading to a Bachelor of Arts or Science degree for students preparing for the study of medicine. Both programs are based upon the program outlined below. In the three-year program the student must complete at least 93 credit hours while enrolled in the college, and the Bachelor of Science degree is granted upon satisfactory completion of the first year of study at UT Health Science Center, Memphis. In the four-year program, the degree is granted upon completion of 124 or more credit hours while enrolled in the college, including a major of 24 or more hours in addition to the courses outlined below. The requirements for a major are waived for those taking their fourth year at UT Health Science Center, Memphis. Students in either the three- or four-year program must complete the last 30 hours of credit in residence at The University of Tennessee before entering UT Health Science Center, Memphis.

Although the Bachelor of Arts/Bachelor of Science degree is not required for admission to the College of Medicine, most students accepted into the study of medicine have the baccalaureate degree before admission. Therefore, pre-medical students are encouraged to plan to complete all requirements for the degree before enrolling in the College of Medicine.

Pre-Pharmacy Concentration

The college offers two programs preparing students for the study of pharmacy at UT Health Science Center, Memphis. The Doctor of Pharmacy (Pharm.D.) degree is conferred by the College of Pharmacy upon completion of four years of professional study at Memphis following either of the two programs. Bulletins describing the pre-pharmacy programs in detail may be obtained from Arts and Sciences Advising Services.

The three-year program leading to a Bachelor of Science degree and the four-year program leading to either a Bachelor of Arts or Bachelor of Science degree from The University of Tennessee, as well as to the professional degree in pharmacy
from UT Health Science Center, Memphis, are based upon the program outlined below. In the three-year program, the student must complete at least 100 credit hours while enrolled in the College of Arts and Sciences, and the College of Science degree is granted upon satisfactory completion of the first year of study in Memphis. In the four-year program the Bachelor of Arts or Bachelor of Science degree is granted upon completion of 124 or more credit hours while enrolled in the college, including a major of 24 or more hours in addition to the courses outlined below. The requirement for a major is waived for those taking their fourth year at The University of Tennessee Health Science Center, Memphis. Students in either the three- or four-year program must complete the last 30 hours of credit in residence at The University of Tennessee before enrolling in the College of Pharmacy.

**Requirements for the Bachelor of Science • Pre-Professional Programs Major • Pre-Pharmacy Concentration**

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<thead>
<tr>
<th>Freshman</th>
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<td>Chemistry 120-130</td>
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<td>3-8</td>
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<td>Foreign Language (Intermediate-Level Sequence)</td>
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**Sophomore**

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<tr>
<td>Chemistry 350-360 and 369</td>
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<tr>
<td>Biochemistry and Cellular and Molecular Biology 230</td>
</tr>
<tr>
<td>Biology 240</td>
</tr>
<tr>
<td>Social Sciences</td>
</tr>
<tr>
<td>Physics 221</td>
</tr>
<tr>
<td>Speech 210, 220, or 240</td>
</tr>
<tr>
<td>Humanities</td>
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**Junior**

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<th>Hours Credit</th>
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<tr>
<td>Biochemistry and Cellular and Molecular Biology 401-402</td>
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<tr>
<td>Ecology and Evolutionary Biology 240</td>
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<tr>
<td>Statistics 201</td>
</tr>
<tr>
<td>Social Science</td>
</tr>
<tr>
<td>Non-U.S. History</td>
</tr>
<tr>
<td>Humanities</td>
</tr>
<tr>
<td>Upper-Level Distribution</td>
</tr>
<tr>
<td>Microbiology 210 or 310-319</td>
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<td>Microbiology 430</td>
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</table>

**Senior**

Completion of major program and BA/BS requirements, or completion of one year at UT Health Science Center in Memphis

| Total | 124 minimum |

**Requirements for the Bachelor of Science • Pre-Professional Programs Major • Pre-Physical Therapy Concentration**

<table>
<thead>
<tr>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
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<td>Mathematics</td>
</tr>
<tr>
<td>Computer Science 100</td>
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<td>Psychology 110</td>
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**Sophomore**

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<td>Biochemistry and Cellular and Molecular Biology 230, Ecology and Evolutionary Biology 240</td>
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<td>Physics 221-222</td>
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<td>Foreign Language (Intermediate-Level Sequence)</td>
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<td>Humanities</td>
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<tr>
<td>Non-U.S. History</td>
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**Junior**

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<tr>
<th>Hours Credit</th>
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<td>Humanities</td>
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<tr>
<td>Social Sciences</td>
</tr>
<tr>
<td>Upper-Level Distribution</td>
</tr>
<tr>
<td>Psychology 220 or 300</td>
</tr>
<tr>
<td>Statistics 201</td>
</tr>
<tr>
<td>Electives</td>
</tr>
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</table>

**Pre-Physical Therapy Concentration**

The following program is designed for students who wish to pursue an Arts and Sciences degree while preparing for the study of Physical Therapy. Students in this program must complete at least 93 hours credit hours while enrolled in the College of Arts and Sciences, and must satisfy the Basic Skills and Distribution Requirements, and must complete the last 30 hours in residence at The University of Tennessee, Knoxville before enrolling in the College of Allied Health Sciences Center at the UT Health Science Center in Memphis, Tennessee. A departmental major is not required. Upon successful completion of the first year of the professional physical therapy curriculum, the Bachelor of Science degree will be conferred by the College of Arts and Sciences.

Admission to the College of Allied Health Sciences is at the discretion of the Admissions Committee of that College. Admission to and successful completion of this program does not assure admission to the College of Allied Health Sciences.

**NOTE:** The Physical Therapy Program in Memphis is in the process of transitioning from a Master’s Program to a Doctor of Physical Therapy (DPT). When the DPT goes into effect, students will be required to have an undergraduate degree for admission to the program. Students should contact the College of Allied Health in Memphis for the current status of this program.
Senior
Completion of major program and BA/BS requirements or completion of one year at UT Health Science Center in Memphis.

Total 124 minimum

(1) Biology 130 and 140 are highly recommended as foundational courses for students interested in pursuing careers in the health professions; students who have previously completed Biology 101 and 102 may substitute this sequence for Biology 130.

(2) Mathematics 130 or any calculus course is required as a prerequisite for Physics 221-222. Mathematics placement depends on high school courses and grades, ACT scores, the Mathematics Department’s Mathematics Placement Exam, and Bachelor of Arts/Bachelor of Science requirements.

(3) This requirement assumes a student has had enough language background in high school to begin an intermediate language sequence at The University of Tennessee.

(4) Bachelor of Arts students must select one course from List A, one course from List B and one additional course from List A, B, or C. Bachelor of Science students must complete a minimum of 2 courses from the three lists under the Humanities requirement; not more than one course may be taken in the Arts.

(5) Bachelor of Arts students must complete a minimum of four courses from at least two areas; BS students must complete a minimum of 2 courses from at least two areas for the Social Sciences requirement. Psychology 110 is considered a Social Science.

(6) Bachelor of Science students must complete a minimum of 2 courses from one of the three areas and 1 course from one of the remaining two areas. Bachelor of Science students must complete a minimum of 2 courses in two of the three areas.

(7) Depending on course selection a student may require fewer than the listed elective hours to reach the minimum total of 93 hours. Recommended electives include: Biomechanics of Human Movement (Exercise Science 422 which has a prerequisite of Exercise Science 332), Animal Development and Embryology (Biochemistry and Cellular and Molecular Biology 330-331), Physiology of Exercise (Exercise Science 480), Advanced First Aid and Emergency Care (Health 310), Nutrition 100, courses that deal with the disabled (special education, abnormal psychology, etc.) and additional coursework in the social and behavioral sciences.

(8) The Physical Therapy program is transitioning to a Doctor of Physical Therapy. Consult with the College of Allied Health in Memphis for details.

Nuclear Medicine Technology Concentration

The Nuclear Medicine Technology curriculum requires a minimum of 94 hours credit, including the College’s Basic Skills and Distribution requirements, prior to application for admission to a final year of study at The University of Tennessee Medical Center, Knoxville. Students who complete the Nuclear Medicine Technology program at UTMCK receive the Bachelor of Science degree in Pre-Professional Programs with a concentration in Nuclear Medicine Technology from the College of Arts and Sciences.

Admission to the Nuclear Medical Technology Program at UTMCK is at the discretion of the admissions committee of that department; successful completion of the three year curriculum noted below does not assure admission to the program.

Requirements for the Bachelor of Science • Pre-Professional Programs Major • Nuclear Medicine Technology Concentration

First Year

- English 101-102 ................................................................. 6
- Chemistry 120-130 ......................................................... 8
- Mathematics ................................................................. 8-8
- Foreign Language (Intermediate-Level Sequence) .......... 6-8
- Non-U. S. History .......................................................... 6

Sophomore

- Biology 130-140 ............................................................. 8
- Chemistry 350, 360, 369 ................................................. 15
- Speech Communication 210 ......................................... 3
- Humanities .................................................................. 3
- Social Sciences ............................................................ 6
- Computer Science 100 or 102 ....................................... 3-4

Junior

- Biochemistry and Cellular and Molecular Biology 230 and Ecology and Evolutionary Biology 240 ..................... 9
- Physics 221-222 .......................................................... 8

Pre-Veterinary Medicine Concentration

The following program is designed for students who wish to pursue an Arts and Sciences degree while preparing for the study of Veterinary Medicine. Students in this program must complete at least 93 credit hours while enrolled in the College of Arts and Sciences, must satisfy the Basic Skills and Distribution requirements, and must complete the last 30 hours in residence at The University of Tennessee, Knoxville before enrolling in the College of Veterinary Medicine. A departmental major is not required. Upon successful completion of the first year (two semesters) of the professional veterinary medicine curriculum, the Bachelor of Science degree will be conferred by the College of Arts and Sciences.

Admission to the College of Veterinary Medicine is at the discretion of the Admissions Committee of that College; admission to and successful completion of this program does not assure admission to the College of Veterinary Medicine.
Requirements for the Bachelor of Science • Pre-Professional Programs Major • Pre-Veterinary Medicine Concentration

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<tr>
<td>Biology 240</td>
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<td>Social Sciences</td>
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<td>Biochemistry and Cellular and Molecular Biology 410 or 401 and 402</td>
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Requirements for the Bachelor of Science • Medical Technology Major

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<td>Mathematics</td>
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<td>Sophomore</td>
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<tr>
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<tr>
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<td>Non-U.S. History</td>
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<td>Social Sciences</td>
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<tr>
<td>Upper Level Distribution</td>
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<tr>
<td>(A) U.S. Studies</td>
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<td>3</td>
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<tr>
<td>(B) Foreign Studies</td>
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<td></td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>94</td>
</tr>
</tbody>
</table>

Pre-Teaching Programs Major

Students planning careers in K-12 teaching must complete an Arts and Sciences major in a department, in one of the Inter-disciplinary or Pre-Teaching programs or, if eligible, in the College Scholars Program. Prospective secondary teachers must fulfill the requirements of appropriate content majors; prospective elementary teachers may choose either a departmental major or one of the four options described below. All pre-teaching students should consult appropriate materials in Arts and Sciences Advising Services before making final choices of majors.

To be licensed for teaching, students must also gain formal admission to the Teacher Education Program in the College of Education, Health, and Human Sciences. The process involves successful completion of a series of requirements including presentation of satisfactory scores on certain tests, completing professional courses in the College of Education, Health, and Human Services, maintenance of a 2.7 or higher GPA, and
completing a fifth year program emphasizing practical application. For details, see the College of Education, Health, and Human Sciences section of the Undergraduate Catalog and contact the Advising Center, Claxton Complex 332.

• **Environmental Science Concentration**

This concentration should develop the knowledge and understanding of the environmental sciences appropriate to the needs of the teacher in grades K-8. The prerequisite courses assure that the student has an adequate background in the biological, chemical, and physical sciences to proceed to upper division courses in either of the chosen areas of concentration. The two tracks beyond the core stress the two major emphases of the ecological sciences—the biological and the physical-chemical. The student choosing to emphasize the biological track should be prepared to teach courses in biological science through the middle school years. The student choosing to emphasize the physical-chemical track should be prepared to teach general and earth science through the middle school years.

**Prerequisite Courses**

One mathematics and one science sequence or two science sequences (14-16 hours) may be used to satisfy general education requirements.

Mathematics 115, 123 or 123, 125 or 141-142 or 151-152; Chemistry 120, 130; Biology 130, 140 or Botany 110-120; Geology 101-102 or Geography 131-132 or Physics 221-222.

**Core Courses (11 hours)**

Biology 240, 250; Geology 203.

Beyond the core curriculum, the student must choose 18 hours from the two tracks listed below: 15 hours from one track and 3 hours from the other track.

**Biological Sciences Track**

Botany 305, 310, 330, 431, 350; Ecology and Evolutionary Biology 350, 360, 380, 402, 450-459, 470, 474, 475, 484; Forestry, Wildlife and Fisheries 311; Geography 435, 439; Geology 320; 420; Microbiology 310-319, 470.

**Physical-Chemical Sciences Track**

Biochemistry and Cellular and Molecular Biology 310; Chemistry 350-360-369; Ecology and Evolutionary Biology 446; Geography 334, 433 (3), 434, 436; Geology 450, 455, 485.

**Total (core + track concentration) = 29 hours**

**Mathematics Concentration**

This concentration aims at developing a fundamental understanding of some of the primary avenues of mathematical thought appropriate to the needs of the teacher in grades K-8. Topics include algebra, calculus, computing, geometry, history of mathematics, probability, and statistics.

Mathematics 115, 130, 141-142, 241, 251, 300, 323, 400, 401, 460.

**Total 36 hours**

• **Mathematics and Science Concentration**

This concentration should develop the knowledge and understanding of the natural sciences and mathematics appropriate to the needs of the teacher in grades K-8 and is intended to provide the student with the minimal competence to teach in either or both disciplinary areas. Of necessity, depth in any particular discipline is secondary to obtaining breadth from an array of natural science and mathematics areas. Courses included in the major have been selected to maximize the number of upper-division courses that can be taken without prerequisites.

**Prerequisite Courses (32 hours)**

Mathematics 141-142; Chemistry 120, 130; Biology 130, 140 or Botany 110-120; One sequence from among the following: Astronomy 161-162 or Geography 131-132 or Geology 101-102 or Physics 221-222.

One mathematics and one science sequence or two science sequences (14-16 hours) may be used to satisfy general education requirements.

**Core Courses (1.7 hours)**

Biology 240, 250 or Biochemistry and Cellular and Molecular Biology 230 and Ecology and Evolutionary Biology 240. Choose two of the following three courses: Geology 201, 202, 203. Mathematics 300. Beyond the core curriculum, the student must take two courses from each of these three areas:

A. Biological Sciences (6-8 hours)

Anthropology 496 (3); Biochemistry and Cellular and Molecular Biology 310, 330; of the following three Botany courses choose only one: Botany 305, 306, 309, 310, 321, 330; Ecology and Evolutionary Biology 350, 360, 380, 450-459, 470, 474, 484; Geography 435; Microbiology 310, 470; Psychology 410, 461.

1Course has prerequisite other than prerequisite to this major. See catalog for details.

2Some of these courses may require additional prerequisites. See catalog for details.

B. Physical Sciences (6-8 hours)

Chemistry 350-360-369; Ecology and Evolutionary Biology 446; Geography 334, 433,434; Geography 436, 310; Geology 320, 330, 340, 370, 381, 420.

C. Mathematics (6 hours)

Mathematics 400, 401, 405, 460.

**Total (core + areas A, B, and C) = 35 hours**

• **Science Concentration**

This concentration should develop the knowledge and understanding of the sciences appropriate to the needs of the teacher in grades K-8. The curricular requirement that the student take courses in both biological science (anthropology, biochemistry and cellular and molecular biology, biology, botany, ecology and evolutionary biology, microbiology, psychology) and in physical science (chemistry, geography, geology, physics) is designed to fulfill the state competencies for I General Science and Physical Science and II Biology.
Prerequisite Courses

One mathematics and one science sequence or two science sequences (14-16 hours) may be used to satisfy general education requirements.

Mathematics 115, 123 or 123, 125 or 141-142 or 151-152; Chemistry 120, 130; Biology 130, 140 or Botany 110-120; One sequence from among the following: Astronomy 161-162 or Geography 131-132 or Geology 101-102 or Physics 221-222 Elements of Physics.

Core Courses (14 hours)

Biology 240, 250; Two of the following three courses: Geology 201; Geology 202, 203.

Beyond the core curriculum, the student must take 18 hours from the two tracks listed below: 15 hours from one track and 3 hours from the other track. At least 15 of the 18 hours must be at the 300- or 400-level.

Biological Sciences Track

Anthropology 210, 464, 480, 490, 495, 496; Biochemistry and Cellular and Molecular Biology 230, 310, 330-331; of the following three Botany courses, choose only one: Botany 305; 306, 309; Botany 310, 321, 330; Ecology and Evolutionary Biology 240, 250, 360, 380, 450-459, 470; 474, 475, 484; Geography 435, 436, 439; Geology 320, 420; Microbiology 310-319; 470; Psychology 210, 410, 461.

3Course has prerequisite other than prerequisite to this major. See catalog for details.

Physical Sciences Track

Chemistry 350-360-369; Ecology and Evolutionary Biology 446; Geography 334, 433, 434, 436; Geology 201, 202, 203, 310, 330, 340, 370, 381.

3This course may only be used toward satisfying Part B requirements if it has not been used to satisfy part of the core requirements.

Total (core + track concentration) = 32 hours

African and African-American Studies

See Interdisciplinary Programs.

American Studies

See Interdisciplinary Programs.

Department of ANTHROPOLOGY

http://web.utk.edu/~anthrop/

Professors

C.H. Faulkner (Distinguished Professor), Ph.D. Indiana; Faye V. Harrison, Ph.D. Stanford; B.J. Howell, Ph.D. Kentucky; R.L. Jantz, Ph.D. Kansas; W.E. Klippel, Ph.D. Missouri; L. Konigsberg, Ph.D. Northwestern; M.H. Logan, Ph.D. Pennsylvania State; G.F. Schroedl, Ph.D. Washington State; J.F. Simek (Distinguished Professor), Ph.D. SUNY-Binghamton

Associate Professors

A. Kramer (Head), Ph.D. Michigan; M. Marks, Ph.D Tennessee

Assistant Professor

H.N. Qirko, Ph.D. Tennessee

Research Director

B. Driscell, Ph. D. Kentucky

Research Associate Professor:

J. Chapman (Director, F.H. McClung Museum), Ph.D. North Carolina

Research Assistant Professor and Curator

S. Frankenberg, Ph.D. Northwestern

Research Assistant Professors

M. Elam, Ph.D. Missouri; S. Sherwood, Ph.D. Tennessee

Lecturer and Coordinator, Forensic Center

L.M. Jantz, Ph.D. Tennessee

Adjunct Professor

R. Dunnell, Ph.D. Yale

Adjunct Associate Professor

L.P. Sullivan, Ph.D. Wisconsin-Milwaukee

Emeriti Faculty

W.M. Bass, Alumni Distinguished Service Professor), Ph.D. Pennsylvania; I. Harrison, Ph.D. Syracuse; P.W. Parmalee, Ph.D. Texas A&M; M.C. Wheeler, Ph.D. Yale

Anthropology (literally “the study of humans”) is a broad and diverse field concerned with all aspects of the human condition: past, present and future. An undergraduate majoring in Anthropology at The University of Tennessee learns of this breadth and diversity by taking courses in Cultural, Biological and Archaeological Anthropology. The major is designed so that all students are trained in these primary subfields, but the curriculum also allows the student to concentrate in those aspects of Anthropology that she/he finds most interesting. The undergraduate who earns a B.A. in Anthropology from The University of Tennessee is prepared to enter careers in a variety of fields such as health, education, government, law, social work, and human services. If the student is interested in a career as a professional anthropologist, graduate training is a necessity. The excellence of the faculty and the relevance of available courses in the department afford future anthropologists the undergraduate background necessary to pursue advanced degrees.

Progression Requirements

Progression into the Anthropology major is based on performance in the three prerequisite courses: 110, 120, and 130. Students must maintain a grade point average of at least 3.0 for the three introductory courses, with none of the three grades below a C. Upon satisfactory completion of the prerequisites, the student may apply for progression into the Anthropology major by completing a formal application for progression in the Anthropology Department and including with that application an academic history demonstrating satisfactory completion of the progression requirements. The Undergraduate Committee of the Anthropology Department will meet regularly to determine the status of these applications. Upon progression to the major, a department advisor will be assigned in consultation with the student.
ANTHROPOLOGY MAJOR

The anthropology major consists of 30 hours including 450 or 357 and 27 additional hours of upper-division course work in Anthropology. This course work shall be distributed as follows:

- One course from archaeological method and theory: 361, 362, 440, 464
- One course from archaeological area: 360, 363, 462, 463
- One course from cultural area: 310, 311, 312, 313, 315, 316, 319, 320
- One course from cultural method and theory: 410, 411, 412, 413, 414, 416, 431
- Two courses from biological anthropology: 480, 485, 490, 494, 495, 496
- Remaining hours may be selected from any upper-division Anthropology courses.

Students with senior standing are encouraged to substitute appropriate 500-level courses (with permission of the instructor of the course and approval of the Department Head) for any portion of the above.

Continuation in the anthropology major requires maintenance of a 2.5 GPA or better in all anthropology courses. Students failing to meet this standard will be notified in writing that they are on probation and their records will be reviewed. Those who continue in probationary status for two consecutive semesters will be dropped from the major.

Honors Concentration

The Department of Anthropology offers honors seminars for juniors and seniors, leading to an Honors concentration. The Honors concentration consists of 357 and 457 plus 24 additional hours of upper division course work in Anthropology distributed as specified above for the major.

Minor in Anthropology

Anthropology 110, 120, 130 are prerequisite to a minor in Anthropology consisting of 15 hours of upper-division Anthropology courses (chosen in consultation with an Anthropology advisor).

School of Art

http://web.utk.edu/~art

Professors

P. Lee (Director), M.F.A. Cranbrook Academy of Art; S.J. Blain, M.F.A. Wisconsin; M. Brakke, M.F.A. Yale; M.B. Goldenstein, M.F.A. Nebraska; D. M. Habel, Ph.D. Michigan; B. Lee, M.F.A. Yale; W.E. Leland, M.F.A. Tennessee; B. Lyons, M.F.A. Arizona State; N. Magden, Ph.D. Case Western Reserve; F.C. Moffatt, Ph.D. Chicago; T.J. Riesing, M.F.A. Nebraska; C. Staples, M.F.A Michigan State; F.C. Stewart, M.F.A. Claremont; D. Wilson, M.F.A. Wisconsin; S.A. Yates, M.F.A. North Carolina (Greensboro)

Associate Professors

S. Brogden, M.F.A. New York State College of Ceramics at Alfred; T. W. Hiles, Ph.D. Pennsylvania State; A.L. Neff, Ph.D. Pennslyvania

Assistant Professors


Progression Requirements

The following core courses must be completed before students can progress into the program as art majors and before further art classes may be taken:

- Art 101; Art 103; Art History 162, 172, 173, or 183 (choose one)

Students entering the major must have earned a minimum 3.0 cumulative average in the above courses to be considered for progression into the School of Art. Those applying will progress in rank order of cumulative average as space allows. The overall record will be evaluated for quality and seriousness of purpose. Excessive absences, withdrawals, incompletes or repeated courses may result in denial of progression. Progression into the School of Art does not guarantee progression into a chosen concentration. Progression into a concentration will follow successful completion of a Concentration Portfolio Review.

BACHELOR OF FINE ARTS IN STUDIO ART

The Bachelor of Fine Arts in Studio Art is a professionally-oriented degree especially intended for those students planning careers or graduate study in the visual arts. All students seeking studio degrees (Bachelor of Arts Studio, Bachelor of Fine Arts Studio) must present and pass the appropriate Portfolio Review for their area of study in order to be admitted into advanced courses. Contact specific program area faculty for review of schedules and details. It should not be assumed that a high grade point average in the major itself assures passing Portfolio Review. The Portfolio Review is recommended in the sophomore year and is intended to provide students with an overview assessment of their potential for success in the intended area of study early enough to allow a student to make a program change should that be advisable. Before choosing a concentration, students should contact their intended area to see what options are offered in the event they do not pass Portfolio Review. All studio courses require 3 hours per week attendance for each credit hour earned. Completing the Bachelor of Fine Arts program may take more than 8 semesters. Students are urged to seek departmental advisement each semester to ensure proper scheduling. Students seeking the Bachelor of Fine Arts Degree in Studio Art should also consider pursuing a minor in Art History.

Transfer students are advised that a minimum of 21 hours in studio courses, and 6 upper-division hours in art history, must be earned at The University of Tennessee. Transfer students must have a minimum overall GPA of 3.00 in Art and Art History courses and may be required to present a portfolio. Those students who have not taken any art courses must take the sequence of courses required of freshmen (Progression Requirements). Students should be cautioned that art courses taken at

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1See section on transfer students. Students have the right to petition the School in the event of unusual enrollment circumstances.
another institution may not apply toward their concentration. Art Design 252, Art Drawing 212, and Art Painting 214 must be taken at The University of Tennessee. Courses not accepted for application toward a concentration may be counted as studio electives.

No grade below C in art courses may be applied to the Bachelor of Fine Arts major. A minimum of 42 credit hours, 300 level or above, must be earned prior to graduation.

Students may be accepted into advanced media concentrations in Ceramics, Drawing, Painting, Media Arts, Printmaking, Sculpture, and Watercolor after passing the appropriate portfolio course.

### Ceramics Concentration

#### Requirements for the Bachelor of Fine Arts • Studio Art Major • Ceramics Concentration

- **Core**
  - Art 101, 103 ................................................................. 4
  - Art 295 .................................................................................. 3
  - Art History 172 and 173 and 162 or 183 ................................. 9
  - Art History Electives .............................................................. 9

- **One course from each of the following 6 areas:**
  - Art Ceramics, Art Drawing, Art Media Arts, Art Painting/ Watercolor, Art Printmaking, and Art Sculpture ...................... 18

- **Concentration**
  - Ceramics 221 or 222 ............................................................. 3
  - Art Ceramics Portfolio Review 320 ........................................... 3
    (Satisfactory/No Credit Grading)
  - Ceramics 321, 322 (prerequisite for all 400 level Ceramics courses) 6
  - Ceramics 421, 422, 429, 493, or 494 ........................................... 14

- **Approved Concentration Electives:**
  - 9 hours from the following: Art Ceramics 424, 429; Art Drawing 212; Art Sculpture 241, 242, 243, 245, 246; Art Printmaking 262, 263; Art Painting 213, 214, 215; Arrowmont Ceramics 420 ........................................... 9

- **Studio Electives**
  - Additional hours in studio courses to be completed in the School of Art or our affiliated facility, Arrowmont School of Arts and Crafts. Students may also apply a maximum of 6 hours of approved studio courses from Art Architecture, Art Education, Electronic Media, Journalism, Computer Science, Human Resource Development, Interior Design or Theatre.
  - Students electing an additional major in Art Education and licensure to teach in schools K-12 may apply 13 hours in undergraduate Art Education courses ......................................................... 18

- **General Curriculum**
  - English Composition .............................................................. 6
  - Non U.S. History/Social Science ............................................... 6
  - Natural Science/Mathematics .................................................... 6-8
  - Arts and Sciences Non-Art Electives ........................................ 14-16

- **Total** 127

### Media Arts Concentration

#### Requirements for the Bachelor of Fine Arts • Studio Art Major • Media Arts Concentration

- **Core**
  - Art 101, 103 ................................................................. 4
  - Art 295 .................................................................................. 3
  - Art History 172 and 173 and 183 or 162 ................................. 9
  - Art History Electives .............................................................. 6
  - Media Arts 231, 235, 236 ....................................................... 9

- **One course from each of the following 5 areas:**
  - Art Drawing, Art Painting/ Watercolor, Art Ceramics, Art Sculpture, Art Printmaking ............................. 15

- **Concentration**
  - Media Arts 330 (Portfolio Review) ........................................ 0
    (Prerequisite to 300 and 400 level courses)
  - Art History 403 (History of Photography) ............................ 3
  - Art Media 433 (History of Modern Film) ............................... 3
  - Art Media 435 (Cinematography as Art) ............................... 6
  - Art Media 436 (Video Art) .................................................... 6
  - Art Media 431 (Photography III) or Art Media 341 (Digital Photography I) ........................................... 4
  - Art Media 441 (Digital Photography II) ............................... 4
  - 300 and 400 level electives in Media Arts ............................. 6

- **Studio Electives**
  - Additional hours in studio courses to be completed in the School of Art or our affiliated facility, Arrowmont School of Arts and Crafts. Students may also apply a maximum of 6 hours of approved studio courses from Art Architecture, Art Education, Electronic Media, Journalism, Computer Science, Human Resource Development, Interior Design or Theatre. Students electing an additional major in Art Education and licensure to teach in schools K-12 may apply 13 hours in undergraduate Art Education courses ......................................................... 15

- **General Curriculum**
  - English Composition .............................................................. 6
  - Social Science ..................................................................... 6-14
  - Natural Science/Mathematics ................................................. 6-14
  - Arts and Sciences Non-Art Electives ........................................ 6-9

- **Total** 125-126
### Painting Concentration

**Requirements for the Bachelor of Fine Arts • Studio Art Major • Painting Concentration**

<table>
<thead>
<tr>
<th>Core</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Art 101,103</td>
<td>4</td>
</tr>
<tr>
<td>Art 295</td>
<td>3</td>
</tr>
<tr>
<td>Art History 172 and 173 and 162 or 183</td>
<td>9</td>
</tr>
<tr>
<td>Art History Electives</td>
<td>9</td>
</tr>
</tbody>
</table>

One course from each of the following 6 areas:
- Art Ceramics, Art Drawing, Art Media Arts, Art Painting/
- Watercolor, Art Printmaking, and Art Sculpture

<table>
<thead>
<tr>
<th>Concentration</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Painting 214 (may be repeated)</td>
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</tr>
<tr>
<td>Art Painting Portfolio Review 314</td>
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<tr>
<td>Painting 313 (for two semesters)</td>
<td>8</td>
</tr>
<tr>
<td>Painting 413 (for two semesters)</td>
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<tr>
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</tr>
<tr>
<td>Art Painting 215, 216; Art Media Arts 231; Art Drawing 212</td>
<td>9</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Studio Electives</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Additional hours in studio courses to be completed in the School of Art or our affiliated facility, Arrowmont School of Arts and Crafts. Students may also apply a maximum of 6 hours of approved studio courses from Architecture, Art Education, Electronic Media, Journalism, Computer Science, Human Resource Development, Interior Design or Theatre. Students electing an additional major in Art Education and licensure to teach in schools K-12 may apply 13 hours in undergraduate Art Education courses</td>
<td>18</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>General Curriculum</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>English Composition</td>
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</tr>
<tr>
<td>Non U.S. History/Social Science</td>
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</tr>
<tr>
<td>Natural Science/Mathematics</td>
<td>6-8</td>
</tr>
<tr>
<td>Arts and Sciences Non-Art Electives</td>
<td>14-16</td>
</tr>
</tbody>
</table>

| Total                 | 127          |

### Sculpture Concentration

**Requirements for the Bachelor of Fine Arts • Studio Art Major • Sculpture Concentration**

<table>
<thead>
<tr>
<th>Core</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Art 101,103</td>
<td>4</td>
</tr>
<tr>
<td>Art 295</td>
<td>3</td>
</tr>
<tr>
<td>Art History 172 and 173 and 162 or 183</td>
<td>9</td>
</tr>
<tr>
<td>Art History Electives</td>
<td>9</td>
</tr>
</tbody>
</table>

One course from each of the following 6 areas:
- Art Ceramics, Art Drawing, Art Media Arts, Art Painting/
- Watercolor, Art Printmaking, and Art Sculpture

<table>
<thead>
<tr>
<th>Concentration</th>
<th>Hours Credit</th>
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<tbody>
<tr>
<td>Writing Assignment</td>
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</tr>
<tr>
<td>Art Sculpture Portfolio Review 340</td>
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</tr>
<tr>
<td>Approved Concentration Electives:</td>
<td></td>
</tr>
<tr>
<td>Art Sculpture 215, 216; Art Media Arts 231; Art Drawing 212</td>
<td>9</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Studio Electives</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Additional hours in studio courses to be completed in the School of Art or our affiliated facility, Arrowmont School of Arts and Crafts. Students may also apply a maximum of 6 hours of approved studio courses from Architecture, Art Education, Electronic Media, Journalism, Computer Science, Human Resource Development, Interior Design or Theatre. Students electing an additional major in Art Education and licensure to teach in schools K-12 may apply 13 hours in undergraduate Art Education courses</td>
<td>18</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>General Curriculum</th>
<th>Hours Credit</th>
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<tbody>
<tr>
<td>English Composition</td>
<td>6</td>
</tr>
<tr>
<td>Non U.S. History/Social Science</td>
<td>6</td>
</tr>
<tr>
<td>Natural Science/Mathematics</td>
<td>6-8</td>
</tr>
<tr>
<td>Arts and Sciences Non-Art Electives</td>
<td>14-16</td>
</tr>
</tbody>
</table>

| Total                 | 127          |

### Printmaking Concentration

**Requirements for the Bachelor of Fine Arts • Studio Art Major • Printmaking Concentration**

<table>
<thead>
<tr>
<th>Core</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Art 101,103</td>
<td>4</td>
</tr>
<tr>
<td>Art 295</td>
<td>3</td>
</tr>
<tr>
<td>Art History 172 and 173 and 162 or 183</td>
<td>9</td>
</tr>
<tr>
<td>Art History Electives</td>
<td>9</td>
</tr>
</tbody>
</table>

One course from each of the following 6 areas:
- Art Ceramics, Art Drawing, Art Media Arts, Art Painting/
- Watercolor, Art Printmaking, and Art Sculpture

<table>
<thead>
<tr>
<th>Concentration</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Printmaking 200 level course</td>
<td>3</td>
</tr>
<tr>
<td>Art Printmaking Portfolio Review 360</td>
<td>0</td>
</tr>
<tr>
<td>Printmaking 300 and 400 level courses</td>
<td>20</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Studio Electives</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Additional hours in studio courses to be completed in the School of Art or our affiliated facility, Arrowmont School of Arts and Crafts. Students may also apply a maximum of 6 hours of approved studio courses from Architecture, Art Education, Electronic Media, Journalism, Computer Science, Human Resource Development, Interior Design or Theatre. Students electing an additional major in Art Education and licensure to teach in schools K-12 may apply 13 hours in undergraduate Art Education courses</td>
<td>27</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>General Curriculum</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>English Composition</td>
<td>6</td>
</tr>
<tr>
<td>Non U.S. History/Social Science</td>
<td>6</td>
</tr>
<tr>
<td>Natural Science/Mathematics</td>
<td>6-8</td>
</tr>
<tr>
<td>Arts and Sciences Non-Art Electives</td>
<td>14-16</td>
</tr>
</tbody>
</table>

| Total                 | 127          |

### Watercolor Concentration

**Requirements for the Bachelor of Fine Arts • Studio Art Major • Watercolor Concentration**

<table>
<thead>
<tr>
<th>Core</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Art 101,103</td>
<td>4</td>
</tr>
<tr>
<td>Art 295</td>
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</tr>
<tr>
<td>Art History 172 and 173 and 162 or 183</td>
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<td>Art History Electives</td>
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</table>

One course from each of the following 6 areas:
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<table>
<thead>
<tr>
<th>Concentration</th>
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</thead>
<tbody>
<tr>
<td>Watercolor</td>
<td>18</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Studio Electives</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Additional hours in studio courses to be completed in the School of Art or our affiliated facility, Arrowmont School of Arts and Crafts. Students may also apply a maximum of 6 hours of approved studio courses from Architecture, Art Education, Electronic Media, Journalism, Computer Science, Human Resource Development, Interior Design or Theatre. Students electing an additional major in Art Education and licensure to teach in schools K-12 may apply 13 hours in undergraduate Art Education courses</td>
<td>27</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>General Curriculum</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>English Composition</td>
<td>6</td>
</tr>
<tr>
<td>Non U.S. History/Social Science</td>
<td>6</td>
</tr>
<tr>
<td>Natural Science/Mathematics</td>
<td>6-8</td>
</tr>
<tr>
<td>Arts and Sciences Non-Art Electives</td>
<td>14-16</td>
</tr>
</tbody>
</table>

| Total                 | 127          |

Students electing an additional major in Art Education must complete 13 hours in undergraduate Art Education courses.

**General Curriculum**

English Composition ................................................................. 6
Non U.S. History/Social Science .................................................. 6
Natural Science/Mathematics .................................................... 6-8
Arts and Sciences Non-Art Electives ........................................... 14-16

**Total** 128

---

**Bachelor of Fine Arts in Studio Art with Additional Courses in Art Education**

Students who wish to obtain licensure to teach art in schools K-12 may pursue the Bachelor of Fine Arts degree in Studio Art with additional courses in Art Education. Up to 13 credit hours of Art Education courses may be used as studio electives. Students who wish to pursue licensure to teach should be aware that general curriculum requirements are different. For details, see Art Education listings in the College of Education, Health, and Human Sciences section of this catalog.

**Bachelor of Fine Arts in Graphic Design**

The Graphic Design major is specifically designed to provide the basic visual education for students who wish to pursue careers in graphic design-related fields such as advertising, art direction, three-dimensional design, publications, or electronic media.

Transfer students are advised that a minimum of 21 hours in studio courses and 6 upper-division hours in Art History must be earned at The University of Tennessee, as well as Art Design 252. Transfer students who expect to enroll in 300 (junior level) courses must present a portfolio of 10-15 works, the majority of which must be in graphic design.

No grade below C in art courses may be applied to the Bachelor of Fine Arts major. A minimum of 42 credit hours, 300 level or above, must be earned prior to graduation.

A minimum of 127 credit hours are required for graduation. Students are advised that courses in Graphic Design must be taken in sequence, and that successful completion of Art 350 (Portfolio Review, Satisfactory/No Credit) is prerequisite to all upper division courses.

Students must complete 351 and 356 with a grade of C or better by the end of the second fall semester following successful completion of Portfolio Review (350). If 351 and 356 are not successfully completed in this time, the student must resubmit a portfolio to regain entrance into the junior program. Resubmission of the portfolio must occur during the scheduled spring portfolio review.

**Requirements for the Bachelor of Fine Arts • Graphic Design Major**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Art 101, 103, 295</td>
<td>7</td>
</tr>
<tr>
<td>Art History 172, 173</td>
<td>6</td>
</tr>
<tr>
<td>Art History electives</td>
<td>9</td>
</tr>
<tr>
<td>Art Drawing 211, 212; Art Painting 213 (or 215); Art Media Arts 231</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>12</strong></td>
</tr>
</tbody>
</table>

**Graphic Design**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Art Graphic Design 151</td>
<td>3</td>
</tr>
<tr>
<td>Art Graphic Design 251, 252, 351, 352, 356, 451, 452, 455 (in sequence)</td>
<td>24</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>27</strong></td>
</tr>
</tbody>
</table>

---

**ART HISTORY MAJOR**

**Requirements for the Bachelor of Arts • Art History Major**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Art History 172, 173 and 183 or 162 (or their Honors equivalents)</td>
<td>9</td>
</tr>
<tr>
<td>Art History courses numbered 300 and above</td>
<td>21</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>30</strong></td>
</tr>
</tbody>
</table>

---

**STUDIO ART MAJOR**

**Requirements for the Bachelor of Arts • Studio Art Major**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Art 101, 103, 295</td>
<td>7</td>
</tr>
<tr>
<td>Art History 162, 172, 173, 183 (any two) and 3 additional hours</td>
<td>9</td>
</tr>
<tr>
<td>Studio courses numbered 200 and above</td>
<td>24</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>40</strong></td>
</tr>
</tbody>
</table>

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Undergraduate work in Art History is enhanced by knowledge of at least one foreign language and by additional studio art experience. Graduate work normally requires reading knowledge of German, French, and any other language appropriate to an area specialization.

Students anticipating possible careers in the museum or gallery field are advised that elective hours in Art 482, Museology II, should be considered.
MINORS

In addition to the general Bachelor of Arts requirements, the following are required for minors in the School of Art:

Minor in Art History

<table>
<thead>
<tr>
<th>Prerequisites</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Art History 172, 173, 183 (or their Honors equivalents)</td>
<td></td>
<td>9</td>
</tr>
<tr>
<td>Minor</td>
<td></td>
<td>15</td>
</tr>
<tr>
<td>Art History courses numbered 200 and above</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>24</td>
</tr>
</tbody>
</table>

Minor in Studio Art

<table>
<thead>
<tr>
<th>Prerequisites</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Art 101, 103, 295</td>
<td></td>
<td>7</td>
</tr>
<tr>
<td>Art History 172, 173, 183 (any two)</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>Minor</td>
<td></td>
<td>15</td>
</tr>
<tr>
<td>Studio courses which include a minimum of 8 additional upper-division hours. Concentration may be Ceramics, Drawing, Media Arts, Painting-Watercolor, Printmaking, Sculpture or a combination from these areas</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>28</td>
</tr>
</tbody>
</table>

Pi Beta Phi Arrowmont School of Arts and Crafts

Director
David Ward

Arrowmont, located 40 miles from The University of Tennessee, Knoxville campus, is a visual arts complex which functions as a regional and national cultural center. In 1954, Pi Beta Phi Fraternity established an affiliation with The University of Tennessee, and with the School of Art in 1978. The program currently includes spring and summer one and two week media workshops, special week-end conferences, and community classes. Media offerings include: clay, fiber, fabric, metal, wood, stained glass, leather, papermaking, drawing, painting, graphics and photography. Students may receive audit, undergraduate, or graduate credit for spring and summer classes through The University of Tennessee School of Art. Facilities include well-equipped studios, on campus book and supply store, a large auditorium, art library, and resident accommodations. The Arrowmont Gallery presents changing juried, invitational, theme or media oriented exhibitions. The Gallery and library are open to the public Monday-Saturday, 8:30 a.m.-5:30 p.m. Arrowmont receives financial support from chapters of the Pi Beta Phi Fraternity, alumnae clubs, and individual members.

Courses are offered periodically at the Pi Beta Phi Arrowmont School of Arts and Crafts, Gatlinburg, Tennessee. Content varies with faculty. Students should check specific course content as printed in the Arrowmont Timetable published each spring.

Asian Studies

See Interdisciplinary Programs.

Astronomy

See Department of Physics and Astronomy.

Department of AUDIOLOGY AND SPEECH PATHOLOGY

http://web.utk.edu/~aspweb/

Professors
I. Schwarz (Head), Ph.D. Oregon; C. Asp, Ph.D. Ohio State; S. Handel (Adjunct), Ph.D. Johns Hopkins; D. Lipscomb (Adjunct), Ph.D. Washington

Associate Professors
S. Burchfield, Ph.D. Michigan State; M. Hedrick, Ph.D. Vanderbilt; P. Payne, Ph.D. Tennessee; L. Swanson, Ph.D. Purdue; J. Thelin, Ph.D. Iowa

Assistant Professors
M. L. Erickson, Ph.D. Southern California; P. Flipsen, Ph.D. Wisconsin; A. Harkrider, Ph.D. Texas; R. Ikard, Ph.D. Wisconsin; M. Munoz, Ph.D. Texas

Instructor
T. Singletary, M.S. Colorado State

Clinical Director
A. Michael, Ph.D. Vanderbilt

The Department of Audiology and Speech Pathology offers course work in the scientific study of human communication sciences and disorders. The two undergraduate majors (Audiology and Speech Pathology) are preparatory to graduate work and to professional certification in some aspect of speech, language, and hearing disorders. The master’s degree is required for professional certificates and employment positions. Information about the audiology and speech pathology programs may be obtained from the departmental office, South Stadium Hall, and students are strongly encouraged to consult with the undergraduate advisor in the department as early as possible in their programs. Suggested elective courses for students not majoring in Audiology and Speech Pathology include 300, 302, 303, 305, 306, 320, and 473.

AUDIOLOGY MAJOR


Applicants for enrollment in clinical practice must submit an application to the departmental Clinical Director. Requirements for enrollment in practicum courses (434 in Speech Pathology or 445 in Audiology) include a minimum cumulative GPA of 2.7 (or 3.0 in the last 30 hours of enrollments), a minimum of C in all courses taken within the department, successful completion of 433, and a minimum GPA of 2.75 within the major.

Students who fail to satisfy the above pre-requisites for clinical practicum experience may graduate with a degree from the department, but will not be recommended for graduate study at The University of Tennessee, Knoxville. Requests for exceptions to this rule may be submitted to the departmental Admissions Committee.

Additional requirements for professional certification include courses in biological/physical sciences, mathematics, and at least six semester hours in behavioral and/or social sciences which pertain to the understanding of normal/abnormal behavior. Students majoring in Audiology and Speech Pathology are strongly encouraged to consult with an advisor before selecting elective courses.
SPEECH PATHOLOGY MAJOR

The Speech Pathology major consists of Audiology and Speech Pathology 300, 302, 303, 305, 306, 320, 433, 435, 461, 473, and 494; and one course from the following courses: Linguistics 200, 371, 372, 411, 471, or 472.

Department of BIOCHEMISTRY AND CELLULAR AND MOLECULAR BIOLOGY

http://web.bio.utk.edu/bcmb/

Professors
B. McKee (Head), Ph.D. Michigan State; J. Becker, Ph.D. Cincinnati; R. Ganguly, Ph.D. Nebraska; M. Handel (Distinguished Professor), Ph.D. Kansas State; E. Howell, Ph.D. Lehigh; K. Jeon, Ph.D. London; D. Joy (Distinguished Scientist), Ph.D. Oxford (UK); J. Kennedy, Ph.D. Iowa; J. Koontz, Ph.D. Kentucky; J. MacCabe, Ph.D. California (Davis); K. Monty, Ph.D. Rochester; C. Peterson, Ph.D. LSU; D. Roberts, Ph.D. California (Davis); E. Serpersu, Ph.D. Hacettepe

Associate Professors
B. Bruce, Ph.D. California (Berkeley); J. Hall, Ph.D. Illinois; R. Prosser, Ph.D. Illinois

Assistant Professors
C. Dealwis, Ph.D. London; E. Fernandez, Ph.D. Loyola; H. Guo, Ph.D. Harvard; N. Jain, Ph.D. Brandeis; J. Park, Ph.D. Texas

Research Professors
F. Hartman, Ph.D. Tennessee; P. Mazur, Ph.D. Harvard; D. Allison, M.S. Tennessee

Biochemistry, cell biology, and molecular biology study the function of cells and organisms at the molecular level. The concentration includes the study of the structure and function of proteins, lipids, carbohydrates, DNA and RNA, as well as how these and other molecules control cellular and organismal function. The curriculum prepares students for a variety of careers in biological research, biotechnology, the health professions or education.

Students wishing to emphasize study in this area elect to major in Biological Sciences with a concentration in Biochemistry, cell biology, and molecular biology study the function of cells and organisms at the molecular level. The concentration includes the study of the structure and function of proteins, lipids, carbohydrates, DNA and RNA, as well as how these and other molecules control cellular and organismal function. The curriculum prepares students for a variety of careers in biological research, biotechnology, the health professions or education.

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Department of BIOLOGY

http://web.bio.utk.edu/division/

Director
Otto J. Schwarz, Ph.D. Botany

Special Lecturer
P. Cox, Ph.D. Biology

Lecturer
S. Guffey, Ph.D. Biology

The Division of Biology consists of four departmental units: Biochemistry and Cellular and Molecular Biology (BCMB); Ecology and Evolutionary Biology (EEB); Microbiology; and Plant Biology (Botany). Each department offers a separate concentration within a common bachelor of sciences degree major, titled Biological Sciences followed by the concentration name. (Honors options are described below.)

BIOLOGICAL SCIENCES MAJOR

The Biological Sciences major offers concentrations in: Biochemistry and Cellular and Molecular Biology; Ecology and Evolutionary Biology; Microbiology; and Plant Biology. An Honors option is available in all four concentrations.

Prerequisites to All Concentrations

Chemistry 120-130; Physics 221-222; Mathematics 141-142 or 151-152; Biology 130 or Botany 110-120; Biology 140-240-250

Progression Requirements

Students may declare a Biological Sciences major after completing the prerequisites Chemistry 120-130, and Biology 130 or Botany 110-120 courses with at least a 2.5 GPA in those courses. A cumulative 2.5 GPA is required to declare and to continue in the major.

Students wishing to declare a major in Biological Sciences will be assigned a faculty advisor in one of the biological sciences departments in consultation with the student. Declaration of a Biological Sciences major should occur as soon as the student decides on this course of study, but not later than three semesters before the expected graduation date in order to ensure that requirements can be met in a timely manner.

Minor in Biological Sciences

A minor in the Biological Sciences consists of 16 hours. Prerequisites are Botany 110-120 or Biology 130-140; and Chemistry 120-130. Requirements are Biology 240 and 250; and at least 8 hours chosen from 300- and 400-level courses in Biochemistry, Cellular and Molecular Biology; Botany; Ecology and Evolutionary Biology; and Microbiology. In meeting the upper-division minimum requirement, not more than 6 hours may be credited from any one biological science department, and not more than 3 hours of undergraduate research may be credited.

Biochemistry and Cellular and Molecular Biology Concentration

The concentration consists of 32 hours including Chemistry 350-360-369, Biochemistry and Cellular and Molecular Biology 401-402, and

- At least 16 additional credit hours selected from Biochemistry and Cellular and Molecular Biology courses numbered 300 or above (except Biochemistry and Cellular and Molecular Biology 310, 410, 457) or from the following courses in other departments: Microbiology 310-319, 410, 411, 420-429, 430, 440; Botany 321, 404; Ecology and Evolutionary Biology 350, 360, 460;
- At least two of the 16 credit hours must be selected from the following laboratory courses: Biochemistry and Cellular and Molecular Biology 403, 416, 419, 429 and 452, and Biology 401;
• At least three of the 16 credit hours must be selected from the following physiology courses: Biochemistry and Cellular and Molecular Biology 440, Botany 321, and Microbiology 310. No more than 9 of the 16 credit hours may be in non-Biochemistry and Cellular and Molecular Biology courses.

Honors Option
An Honors Option is offered to students with a cumulative GPA in Biological Sciences prerequisite courses of 3.5 or above and who have completed Biology 130-140-240-250. The Honors Option also requires a substantive research project carried out under the supervision of a Biochemistry and Cellular and Molecular Biology faculty member and a thesis describing the results of that project. The thesis must be approved by the faculty supervisor.

Ecology and Evolutionary Biology Concentration
The concentration consists of 35 hours:
• Chemistry 350-360-369 or 350, 310-319 or Chemistry 310-319 and Biochemistry and Cellular and Molecular Biology 310.
• Quantitative Requirement: One course from (note mathematics pre-requisites): Mathematics 231 (Prereq. 141-142); Mathematics 251 (Prereq. 141-142); Mathematics 405 (Prereq. 141-142 or 151-152); Statistics 201. Mathematics 141-142 is recommended for students with a strong interest in quantitative ecology and is prerequisite to several courses that satisfy the Ecology and Evolutionary Biology Quantitative Requirement.
• Upper-Division courses: A total of 24 additional hours is required at the 300 level or above to include at least 15 hours from Ecology and Evolutionary Biology, and at least one course from each of the following four categories:
  Evolution—Ecology and Evolutionary Biology 460.
  Ecology—Ecology and Evolutionary Biology 446, 470, 484-485, 491; Microbiology 470.
  Organismal Biology—Ecology and Evolutionary Biology 350, 360, 380, 450, 461, 474; Botany 310, 330; Microbiology 310/119.
  Physiology—Botany 321; Biochemistry and Cellular and Molecular Biology 440, 415; Microbiology 310.
• The remaining hours for the Ecology and Evolutionary Biology concentration can include any of the remaining Ecology and Evolutionary Biology courses on these lists, other Upper-Division Ecology and Evolutionary Biology courses, or appropriate Upper-Division courses offered by the following departments: Anthropology; Botany; Forestry, Wildlife and Fisheries; Geography; Geology; Microbiology; Plant and Soil Sciences. A list of approved appropriate courses may be obtained from the office of either the Division of Biology or Ecology and Evolutionary Biology or from the Department of Ecology and Evolutionary Biology’s webpage. Other courses, related to the student’s determined interests, may be approved by petition to the department and the Division. Courses applied to the major must include at least 4 hours at the 400-level and one laboratory course.

Honors Option
Requirements for the Honors Option are as follows:
• fulfill all requirements for the Biological Sciences: Ecology and Evolutionary Biology major;
• a GPA of 3.5 in all the 300-level and above courses from the concentration and an overall GPA of 3.2;
• a minimum of 4 hours of Ecology and Evolutionary Biology 400, Undergraduate Research, during the junior and senior years;
• Ecology and Evolutionary Biology 407, Senior Thesis; and
• Ecology and Evolutionary Biology 490, Undergraduate Seminar.

Microbiology Concentration
The concentration consists of 34 hours including Chemistry 350-360-369, Biochemistry and Cellular and Molecular Biology 410, Microbiology 310-319, 320-329, and 12 additional hours of 400-level Microbiology courses.

Honors Option
An Honors Option is offered to selected students who have completed the required 300-level Microbiology courses with a minimum grade point average of 3.5 in Microbiology courses and 3.2 for all courses. In addition to these 300-level courses, an honors option requires successful completion of 15 additional hours of 400-level Microbiology courses, including 401 and 402.

Plant Biology Concentration
The Plant Biology concentration consists of 32-34 hours including
• Chemistry 350-360-369 or 350, 310-319 or 310-319; Biochemistry and Cellular and Molecular Biology 310;
• The following Botany courses: Botany 310; Botany 321; Botany 330; Botany 404 or 431; Botany 400, or 441, or 442; plus 9 additional hours of other Upper Division courses offered by Botany or other life science departments (except Botany 305, 306, or 309).

A list of approved courses from other life science departments is available in the Division of Biology office.

Honors Option
Requirements for an Honors Option are as follows:
• a GPA of 3.5 in all the 300-level and above courses from the concentration and an overall GPA of 3.2;
• a minimum of 4 hours of Botany 441-442 (undergraduate research) during the junior and senior year;
• a senior thesis that is acceptable to the student’s committee.
Students interested in pursuing an honors option should contact the Botany office for details.
Department of
BOTANY

http://fp.bio.utk.edu/botany

Professors
E. Schilling (Head), Ph.D. Indiana; J. Caponetti, Ph.D. Harvard; L. Hickok, Ph.D. Massachusetts; K. Hughes, Ph.D. Utah; B. Mulin, Ph.D. North Carolina State; R. Petersen (Distinguished Professor), Ph.D. Columbia; O. Schwarz, Ph.D. North Carolina State

Associate Professors
M. Schweitzer (Distinguished Service Professor), Ph.D. Akron; R. Pagni, Ph.D. Yale; J. Mays (Distinguished Scientist, Science Alliance Center of Excellence), Ph.D. Université de Paris (France); G. Guiochon (Distinguished Scientist, Science Alliance Center of Excellence), Ph.D. Université de Paris (France); G. Kabalka (Robert H. Cole Professor, Alumni Distinguished Service Professor), Ph.D. Purdue; J. Kovac, Ph.D. Yale; J. Larese, Ph.D. Wesleyan; L. Magid, Ph.D. Tennessee; R. Magid, Ph.D. Yale; J. Mays (Distinguished Scientist, Science Alliance Center of Excellence), Ph.D. Akron; R. Pagni, Ph.D. Wisconsin; G. Schweitzer (Alumni Distinguished Service Professor), Ph.D. Illinois; T. Williams (Alumni Distinguished Service Professor), Ph.D. London (England); C. Woods, III, Ph.D. North Carolina State; B. Wunderlich (Distinguished Scientist), Ph.D. Northwestern; Z. Xue, Ph.D. UCLA

Department of
CHEMISTRY

http://www.chem.utk.edu

Professors
M. Sepaniak (Head), Ph.D. Iowa State; J. Adcock, Ph.D. Texas; D. Baker, Ph.D. Ohio State; C. Barnes, Ph.D. Stanford; J. Bartmess, Ph.D. Northwestern; J. Chambers, Ph.D. Kansas; R. Compton, Ph.D. Tennessee; K. Cook, Ph.D. Wisconsin; T. Dunning, Jr. (Distinguished Scientist, Science Alliance Center of Excellence), Ph.D. California Institute of Technology; C. Feigerle, Ph.D. Colorado; G. Guiochon (Distinguished Scientist, Science Alliance Center of Excellence), Ph.D. Université de Paris (France); G. Kabalka (Robert H. Cole Professor, Alumni Distinguished Service Professor), Ph.D. Purdue; J. Kovac, Ph.D. Yale; J. Larese, Ph.D. Wesleyan; L. Magid, Ph.D. Tennessee; R. Magid, Ph.D. Yale; J. Mays (Distinguished Scientist, Science Alliance Center of Excellence), Ph.D. Akron; R. Pagni, Ph.D. Wisconsin; G. Schweitzer (Alumni Distinguished Service Professor), Ph.D. Illinois; T. Williams (Alumni Distinguished Service Professor), Ph.D. London (England); C. Woods, III, Ph.D. North Carolina State; B. Wunderlich (Distinguished Scientist), Ph.D. Northwestern; Z. Xue, Ph.D. UCLA

Associate Professors
M. Dadmun, Ph.D. Massachusetts; R. Hinde, Ph.D. Chicago; J. Musfeldt, Ph.D. Florida; F. Schell, Ph.D. Indiana

Assistant Professors
S.D. Gilman, Ph.D. Penn State; J.F.C. Turner, Ph.D. Oxford; D.G.J. Young, Ph.D. Ohio State; X. Zhang, Ph.D. Pennsylvania; B. Zhao, Ph.D. Akron

The Department of Chemistry presents to the next generation of chemists and chemically literate citizens an integrated program of teaching and research that will prepare them to respond responsibly to current and future national needs. To satisfy our diverse clientele, the educational program is continually improved and includes research, classroom, and laboratory activities. In addition, we endeavor to maintain local responsibilities in support of the University’s mission for public service.

Placement in General Chemistry Sequences

The sequences which meet all of the requirements of a year of General Chemistry and which serve as prerequisite for upper-division courses are 120-130 and 128-138; chemistry majors are strongly urged to take the latter sequence. Courses 100 and 110 emphasize organic and biochemistry, and may not be used as prerequisite for other chemistry courses. Courses 150 and 160 are designed to increase the chemistry literacy and consumer knowledge of students and may not be used as prerequisites for any other chemistry course.

It is possible to move from one sequence to another if permission for substitution is obtained in advance. For example, a student who finds a need to complete the 120-130 series after having completed 100 may substitute 100 for 120 with approval of the Department of Chemistry and may then take 130. Credit may be received for only one of the courses 100, 120, or 128.

In any chemistry course above the freshman level which has Chemistry 130 as a prerequisite, 110 may be used as a prerequisite with approval of the Department of Chemistry.

Chemistry 128-138 is an honors course designed for the student who has already made considerable progress in science. Class size is limited to promote faculty-student interaction. Selection is based on ACT scores, high school chemistry grade, and, if necessary, performance on a placement examination to be given during the first class meeting. A student receiving a passing grade below B in 128 will complete the year’s work by taking 130.

Beginning students who have had high school chemistry and who have had additional experience (e.g. summer institute study, special research projects, home laboratory) are invited to apply during the summer to the head of the department for permission to take a proficiency examination in one or more semesters of general chemistry. If a satisfactory grade is made on the examination, credit will be allowed for the semester (or course) for which the exam was taken. The Department of Chemistry gives credit in general chemistry to students who present satisfactory scores on the Chemistry Advanced Placement Examination.

Cooperative Program

A cooperative program is available to students who are Chemistry majors. After the freshman year, the student alternates a semester in school with a semester in a job in the chemical industry. The program normally requires five years and involves...
a total of four work semesters and eight school semesters. Students are required to have at least a 2.5 average to enter and remain in the program. Some opportunity exists for students to enter the program later than the end of the freshman year. Interested students should make application to the head of the department at least one semester in advance of the beginning of the first work period. Further information will be supplied on request.

**CHEMISTRY MAJOR**

Students who desire to major in chemistry may select from either of two courses of study: Bachelor of Science or Bachelor of Science in Chemistry.

**Bachelor of Science in Chemistry**

The Bachelor of Science in Chemistry is approved by the Committee on Professional Training of the American Chemical Society. It is designed to train students to go directly into positions in the chemical industry or to enter graduate study leading to positions in research and college teaching. A student in the Bachelor of Science in Chemistry program should, at the earliest opportunity, ask the Arts and Sciences Advising Center for assignment of a faculty advisor in the Department of Chemistry. For further information, contact the Head of Department of Chemistry, 552 Buehler Hall.

**Requirements for the Bachelor of Science in Chemistry • Chemistry Major**

<table>
<thead>
<tr>
<th>Years</th>
<th>Courses</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freshman</td>
<td>Chemistry 120-130 or (preferably) 128-138</td>
<td>8</td>
<td>8</td>
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<tr>
<td></td>
<td>Mathematics 141-142</td>
<td>8</td>
<td>8</td>
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<tr>
<td></td>
<td>English Composition</td>
<td>6</td>
<td>6-10</td>
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<tr>
<td></td>
<td>Foreign Language (intermediate level sequence)</td>
<td>6</td>
<td>6-10</td>
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<tr>
<td></td>
<td>Distribution</td>
<td>3</td>
<td>3</td>
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<tr>
<td>Sophomore</td>
<td>Chemistry 240</td>
<td>2</td>
<td>2</td>
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<tr>
<td></td>
<td>Chemistry 230</td>
<td>3</td>
<td>3</td>
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<tr>
<td></td>
<td>Chemistry 350-360</td>
<td>6</td>
<td>6</td>
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<tr>
<td></td>
<td>Chemistry 369</td>
<td>2</td>
<td>2</td>
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<tr>
<td></td>
<td>Mathematics 241 and either 231 or 251</td>
<td>7</td>
<td>8-10</td>
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<td></td>
<td>Physics 135-136 or 137-138</td>
<td>8</td>
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<tr>
<td></td>
<td>Distribution</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Junior</td>
<td>Chemistry 310-320</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Chemistry 319-329</td>
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<td></td>
<td>Chemistry 473-483</td>
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<td>Chemistry 479-489</td>
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<td>Distribution</td>
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</tr>
<tr>
<td></td>
<td>Electives</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Senior</td>
<td>Chemistry 430</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Chemistry 439</td>
<td>3</td>
<td>3</td>
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<td></td>
<td>Chemistry 406</td>
<td>1</td>
<td>1</td>
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<tr>
<td></td>
<td>Chemistry 400</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Biochemistry and Cellular and Molecular Biology 410 or 401</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Chemistry Electives</td>
<td>3</td>
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</tr>
<tr>
<td></td>
<td>Distribution</td>
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<td>Electives</td>
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<tr>
<td>Total</td>
<td></td>
<td>126-132</td>
<td></td>
</tr>
</tbody>
</table>

1Preferably chosen from German, French, Russian or Japanese; the College of Arts and Sciences requires that a student demonstrate intermediate-level competence in whatever foreign language is chosen.

2The distribution requirements of the College of Arts and Sciences are satisfied by taking: Non-U. S. History (6 hours), Social Science (6 hours), Humanities (6 hours), and Upper Level Distribution (3 hours in either U.S. Studies or Foreign Studies and 3 hours Capstone Experience). The number of credit hours shown in each year of the curriculum are merely intended as guidelines.

3It is recommended that a portion of these elective hours be applied to advanced courses in biochemistry and cellular and molecular biology, mathematics, physics, or chemical, metallurgical, and polymer engineering.

4To be chosen from Chemistry 400, 401, 408, 420, 450, and 490.

### Bachelor of Science

The Bachelor of Science degree is available to students who desire a more flexible program.

Prerequisites to the major are Chemistry 120-130 or 128-138 and Mathematics 141-142 or 151-152. Corequisite to the major is Physics 221-222, 135-136, or 137-138.

The major consists of Chemistry 240, 310, 319, 350-360, 369, 471-481 or 473-483, 479 and 10 hours of additional work in chemistry at the 200-level or above that includes at least one laboratory course or lecture/laboratory course; up to 6 hours of Biochemistry and Cellular and Molecular Biology 410-420 or 401-402 or Geology 460 may be applied to the 10-hour requirement.

For students planning careers in Chemistry, the recommended courses (from the list above) are Mathematics 141-142, Physics 135-136 or 137-138, and Chemistry 473-483; although not required, certain additional courses are strongly suggested for students planning to become chemists: Mathematics 241 and Chemistry 230, 320, 329, and 406. Because professional chemists need a reading knowledge of foreign languages, intermediate level competency should be acquired in German, French, Russian or Japanese. Students who are undecided about their career goals should consult the Head of the Department at the earliest opportunity. Unlike the Bachelor of Science in Chemistry, the regular Bachelor of Science degree is not approved by the Committee on Professional Training of the American Chemical Society.

### Honors Concentration

Candidates for the Honors concentration in Chemistry must fulfill all of the requirements for either the Bachelor of Science in Chemistry or the regular Bachelor of Science degree and must also satisfy the following stipulations: they must complete with grades of C or better Mathematics 141-142, Physics 135-136 or 137-138, and Chemistry 473-483, 400, and 408; and they must have an overall university GPA of at least 3.0 with a GPA in chemistry courses of at least 3.3.

### Minor in Chemistry

A minor in Chemistry consists of 15 hours of chemistry courses numbered 200 and above including 310, 319 (4 hours) and at least one of the following sequences: 350-360, 369 (8 hours); or 471-481, 479 (8 hours); or 473-483, 479 (8 hours).

### Chinese

See Department of Modern Foreign Languages and Literatures.
CLASSICS MAJOR

The department’s programs are designed to allow students to understand the foundations of the western cultural tradition. We do this through a focus on the classical languages and literatures, archaeology, art, mythology and religion, political and social history. Through these studies, students develop skills in critical thinking, reading, writing and speaking. They also develop a sense of the ways in which both shared traditions and personal creativity inform one’s choices, and of the opportunities for good citizenship in a complex world.

Greek Concentration

The concentration in Greek consists of 27 hours including 18 hours of Greek language courses numbered above 200 plus 9 hours to be drawn from the following: any courses in the Classics Department (other than Greek 121-122, Latin 150, Classics 201, Classics 273) or History 311.

Minor in Latin

The Latin minor consists of 18 hours including 12 hours of Latin language courses numbered above 200, and 6 hours chosen from Classics 221-222, 331, 334.

Placement Examination

Students who transfer to The University of Tennessee from other colleges and students who enter with high school units in Latin should register for the courses in which they would normally be placed on the basis of such credits. During freshman orientation a placement test will be given, and students will be advised if a change in registration is indicated by the results.

Proficiency Examinations

Students who have acquired a knowledge of Latin through private study or tutoring should request from the Department a proficiency test. A student who earns a grade of B or better in this examination is eligible for credit toward graduation. A student who omits any course in a sequence may receive credit for it by passing the appropriate proficiency examination.

COLLEGE SCHOLARS MAJOR

College Scholars is a major with selective admission. For details contact the director. All Scholars must enroll in one of the College Scholars Seminars 317-318 each term. They are encouraged to complete work in College Scholars Honors 491-492-493. Each student must complete a substantial piece of research, scholarship or creative imagination. College Scholars 498 is the appropriate course to use to receive credit for this work.

Comparative Literature

See Interdisciplinary Programs.

Latin Concentration

The concentration in Latin consists of 27 hours including 18 hours of Latin language courses numbered above 200 plus 9 hours to be drawn from the following: any courses in the Classics Department (other than Latin 111-112, Latin 150, Classics 201, Classics 273) or History 311.

Minor in Classical Civilization

A minor in Classical Civilization consists of 18 hours including Classics 201 plus any 6 hours drawn from the following: Classics 221-222; 232-233; 253. The remaining 9 hours may be drawn from Greek 261-264, Latin 251-252, or any Classics course numbered above 300, or from History 311, History 366, or Philosophy 320. Students are encouraged to satisfy the foreign language requirement with Greek or Latin.

COLLEGE OF ARTS AND SCIENCES

http://www.cs.utk.edu/
The computer has achieved a position of great importance in modern life. It is a vital tool in business, science, communications, and health care. The Department of Computer Science offers education in the principles of computer science and training in the technology of computers. The program’s emphasis is divided among hardware, software, and theory, giving students a wide view of the discipline and enabling them to discover their areas of interest. Graduates of the program are prepared to help others make effective use of computers in their daily lives.

Progression Standards

Progression into the Computer Science major is based on the availability of space in the laboratories and other resources. Progression requirements are adjusted periodically and current requirements can be determined by consulting with an advisor in the Undergraduate Programs Office or by contacting the Computer Science Department directly. Students who enter the College of Arts and Sciences as freshmen or sophomores are expected to apply for the major immediately after attempting 12 hours in Computer Science.

Recent Progression Standards

- Has completed at least the following three courses at The University of Tennessee with an average of 3.0 or better: Computer Science 102, 140, and 160 for University students. Transfer students’ course work will be evaluated individually.
- Has achieved an average of 2.5 or better in all Computer Science courses taken at The University of Tennessee that apply to the major. All grades received for these courses are averaged.
- Has received at most one W or repeated grade in a Computer Science course.
- Has not been disciplined for academic dishonesty in a Computer Science course or for abuse of university computing privileges.

Progression standards are subject to change; current standards are available in the Undergraduate Programs Office and the Computer Science Department Office, 203 Claxton Complex.

Transfers from Other Programs at The University of Tennessee

Students in other colleges or majors at The University of Tennessee must apply for progression to the major at the earliest possible date but ideally prior to 75 hours. As a minimum, all students must be admitted to the Computer Science major for at least the last 30 hours of work.

Transfers from Other Institutions

Transfers from other institutions are generally handled the same as transfers from other University of Tennessee programs. However, a prospective transfer student should consult with an advisor in the Computer Science Department to determine which courses can be accepted toward the Computer Science major. It should not be assumed that courses with similar names to University of Tennessee courses can be accepted toward the major.

Appeals

Those students denied progression may appeal to the Undergraduate Committee of the Computer Science Department. Information on the appeals process can be obtained by calling the Computer Science Department, 974-5067, the Undergraduate Programs Office, 974-5096, or by contacting an advisor in that office.

COMPUTER SCIENCE MAJOR

The major in Computer Science consists of 40 hours. Prerequisites to the major include Computer Science 102, 140, 160; Mathematics 141-142; and a two semester laboratory science sequence (Physics 135-136 or Biology or Chemistry or a sequence approved by the Computer Science Department). The major consists of 302, 311, 365, and 380; two of the three courses 340, 360, and 370; Mathematics 241, 251, and 300; English 360, and either an additional 9 hours of upper division Computer Science or an additional 6 hours of upper division Computer Science and Mathematics 231.

It is highly recommended that all Computer Science majors own a personal computer with communications capability.

Minor in Computer Science

An undergraduate minor consists of Computer Science 140 and 160, plus 15 hours of 300 and 400 level courses.

Department of EARTH AND PLANETARY SCIENCES

http://geoweb.gg.utk.edu/

Professors

C.I. Mora (Head, Carden Professor), Ph.D. Wisconsin; T.W. Broadhead, Ph.D. Iowa; S.G. Griese, Ph.D. Wisconsin; W.M. Dunne, Ph.D. Bristol; R.D. Hatcher (UT Knoxville/ORNL Distinguished Scientist), Ph.D. Tennessee; T.C. Labotka, Ph.D. Caltech; M. L. McKinney, Ph.D. Yale; H.Y. McSween (Distinguished Professor of Science), Ph.D. Harvard; K.C. Misra, Ph.D. Western Ontario; L.A. Taylor, Ph.D. Lehigh

Associate Professors

G. M. Clark, Ph.D. Pennsylvania State; L.D. McKay, Ph.D. Waterloo; R.T. Williams, Ph.D. V.P.I.

Assistant Professors

L.C. Kah, Ph.D. Harvard; E. Perfect, Ph.D. Cornell; M. Uhle, Ph.D. Virginia

The Department of Earth and Planetary Sciences emphasizes study of the Earth and of planetary systems at all scales of observation. Earth and Planetary Sciences strives to interpret the physical, chemical and biological processes operating over 4.6 billion years of Earth history, as well as those processes involved in the formation of terrestrial planetary bodies within our solar system.
GEOLOGY MAJOR

Prerequisites are Geology 101-102; Chemistry 120-130; Mathematics 141-142 or 147-148; plus one two-semester sequence and one additional course from Physics 135-136 and Biology 130-140.

Major Requirements are Geology 310, 320, 330, 340, 370, 380 and 440 (29 hours), plus 9 additional hours of geology courses at the 400-level. The department encourages undergraduates to participate in research opportunities including a senior thesis. A maximum of 3 hours of 493 may be counted toward the major.

Honors Concentration

Honors students with five completed upper-division Geology courses and a cumulative GPA of at least 3.0 may pursue a senior research thesis in collaboration with a faculty member. The thesis involves successful completion of 3 semester hours of Geology 491, 492, or 493 beyond the normal requirements for the major. Thesis results must be orally presented, and an approved written thesis must be submitted to the department. A GPA of at least 3.0 must be maintained throughout matriculation. Interested students should consult their academic advisor for details.

Minor in Geology

Minor requirements are Geology 101 and 102 or 103, and at least 16 hours of Geology courses above 100 level, with no more than 6 of the 16 hours at 200 level. A maximum of 3 hours of 493 may be counted toward the minor.

Department of Ecology and Evolutionary Biology

http://eeb.bio.utk.edu/

Professors
C.R.B. Boake (Head), Ph.D. Cornell; T.G. Hallam, Ph.D. Missouri; D.L. Bunting, II, Ph.D. Oklahoma State; G.M. Burghardt Ph.D. Chicago; H. Delcourt, Ph.D. Minnesota; P.A. Delcourt, Ph.D. Minnesota; A.C. Echtenacht, Ph.D. Kansas; D.A. Etnier, Ph.D. Minnesota; N.B. Greenberg, Ph.D. Rutgers; L.J. Gross, Ph.D. Cornell; W.F. Harris, III, Ph.D. Tennessee; G.F. McCracken, Ph.D. Cornell; M.L. Pan, Ph.D. Pennsylvania; S.E. Riechert, Ph.D. Wisconsin; G.S Sayler, Ph.D. Idaho; T.W. Schulz, Ph.D. Tennessee; D. Simberloff (Gore Hunger Chair of Excellence), Ph.D. Harvard; G. Stacey, Ph.D. Texas (Austin)

Associate Professors
C.C. Amundsen, Ph.D. Colorado; J.A. Drake, Ph.D. Purdue; D.J. Fox, Ph.D. Johns Hopkins; S. Gavrilets, Ph.D. Moscow State; M. Pigliucci, Ph.D. Connecticut

Assistant Professors
M. Butler, Ph.D. Washington (St. Louis); P. Kover, Ph.D. Indiana; J. Weltzin, Ph.D. Arizona; J. Wolf, Ph.D. Kentucky

Ecology and Evolutionary Biology deals with the interactions of organisms with one another and with their physical environment, and with the processes through which these interactions have developed and continue to change through time.

The curriculum will provide students with an understanding of ecological interactions and evolutionary processes that are fundamental to the operation of the natural world. The scope of this program ranges from the molecular level, to individual organisms, to populations, communities, and ecosystems. The program offers career opportunities in academia, industry, governmental and non-governmental agencies that are concerned with the importance and integrity of natural systems, and in education at all levels.

Students wishing to emphasize study in this area elect to major in Biological Sciences with a concentration in Ecology and Evolutionary Biology. See the description of the major and concentration under “Division of Biology” for requirements.

Department of Economics

See faculty listing in the College of Business Administration.

The program in economics combines a broad liberal education with the rigorous study of current issues of the day such as employment, inflation, poverty, wealth, and the benefits and costs of economic growth.

Courses offered in the Department of Economics in the College of Business Administration provide opportunity for a major or minor in Economics in the College of Arts and Sciences.

In addition, certification to teach Economics in secondary schools is available. Students with such interest should consult the College of Education, Health, and Human Sciences as early in their program as possible to determine the appropriate requirements.

ECONOMICS MAJOR

Requirements consist of Economics 201 or equivalent Honors courses as a prerequisite to the major and Economics 311, 313, and 499, plus 18 additional hours in upper-division economics courses. Majors are encouraged to satisfy List B of the Natural Science Distribution Requirement with one of the mathematics packages (Mathematics 115-123, 123-125, or 141-142). Students planning graduate work in Economics should elect Mathematics 141-142.

Honors Concentration

Requirements consist of Economics 311, 313, 499, and 18 additional upper-division hours, including registering for three hours of 493 Independent Study, which should lead to the writing of an honors thesis. Interested students should contact the department for details.

Minor in Economics

A minor consists of Economics 201 and 12 additional hours at the upper-division level. Minors are encouraged to include Economics 311 and 313.
Department of
ENGLISH
http://web.utk.edu/~english/

Professors
J.P. Zomchick (Head), Ph.D. Columbia; B.K. Dumas, Ph.D. Arkansas; D.A. Carroll, Ph.D. North Carolina; D.R. Cox, Ph.D. Missouri; B.K. Dumas, Ph.D. Arkansas; A.R. Dunn, Ph.D. Washington; A.R. Ensor, Ph.D. Indiana; R.J. Finneran (John C. Hodges Professor), Ph.D. North Carolina; S.B. Garner (Young Professor), Jr., Ph.D. Princeton; D.F. Goslee, Ph.D. Yale; N.M. Goslee (Alumni Distinguished and Young Professor), Ph.D. Yale; T.J.A. Heffernan (Curry Professor), Ph.D. Cambridge; M. Kallet, Ph.D. Rutgers; M.L. Keene, Ph.D. Texas; R.M. Kelly (Young Professor), Ph.D. Duke; B.J. Leggett (Humanities Professor), Ph.D. Florida; I. Leki, Ph.D. Illinois; M.A. Lofaro, Ph.D. Maryland; C. Maland (Young Professor), Ph.D. Michigan; A. Smith, Ph.D. Houston; R.E. Stillman, Ph.D. Pennsylvania; J.B. Trahern, Jr. (Alumni Distinguished Professor), Ph.D. Princeton; A. Wier, M.F.A. Bowling Green

Associate Professors
M.G. Anderson, Ph.D. Vanderlilt; J.M. Atwill, Ph.D. Purdue; P.G.; A.J. Elias, Ph.D. Penn State; R. Hirst, Ph.D. Rensselaer Polytechnic; L.L. Howes, Ph.D. Columbia; L.D. Jennings, Ph.D. North Carolina; M.E. Papke, Ph.D. McGill

Assistant Professors
A.C. Billone, Ph.D. Princeton; J.L. Black, Ph.D. Toronto; T.F. Haddock, Ph.D. Vanderlilt; H.A. Hirschfeld, Ph.D. Duke; D. Ikard, Ph.D. Wisconsin; M. Knight, M.F.A. Virginia; M.J. Reiff, Ph.D. Kansas; L.M. Schoenbach, Ph.D.; U. Seshagiri, Ph.D. Illinois

Lecturers
T.A. Adams, Ph.D. Wisconsin; J.C. Burton, Ph.D. SUNY Stony Brook; S.E. Capps, Ph.D. Tennessee; P.P. Christie, Ph.D. Tennessee; E.K. Dzuban, M.A. Tennessee; J.A. Edwins, Ph.D. Tennessee; M.L. Forsythe, M.A. Tennessee; W.J. Hardwig, Ph.D. Florida; M.R. Hardwig, Ph.D. Tennessee; S.C. Harris, Ph.D. Tennessee; K.L. Havens, Ph.D. Tennessee; C.J. Hitt, Ph.D. Oregon; W.B. Larsen, Ph.D. Tennessee; D.E. Magill, Ph.D. Kentucky; S.E. Melton-Summer, Ph.D. Tennessee; E.G. Meredith, M.A. Tennessee; K. McCue, M.A. Tennessee; M.R. McDowell, M.A. Tennessee; D.K. McKinstry, Ph.D. Tennessee; F.M. Pearson, M.A. Tennessee; J.L. Peavler, M.A. Tennessee; N.H. Preston, Ph.D. Tennessee; M.M. Renufo, Ph.D. Tennessee; K.C. Robertson, M.A. Tennessee; C.N. Rode, Ph.D. Tennessee; R. L. Spirko, Ph.D. North Carolina; A.A. Stafford, Ph.D. Pittsburg; J.A. Tomlinson, M.A. Tennessee; S. Waller, M.A. Tennessee; R. Wilhelm, Ph.D. Tennessee; R. Yost, M.A. Tennessee

Permanent Part-Time Lecturers
L. C. Berry, M.A. Tennessee; P.A. Tschantz, M.A. New Mexico State

Writing Center Director
K. F. Benson, Ed.D. Tennessee

The English major provides students with the ability to analyze and interpret literary and other kinds of texts; to place those texts within historical, theoretical, and aesthetic contexts; to evaluate arguments according to their logical and rhetorical features; and to develop the skills of written and oral communication. While developing these abilities, students are also urged to discover their own critical and artistic voices by gaining proficiency in organizing complex material, addressing multiple audiences, and understanding the medium of language. In the spirit of liberal education, the English major attempts to satisfy society’s increasing need for a citizenry skilled in critical thought and communication.

Prerequisites and Corequisites
One two-semester sequence chosen from the following groups: English 201-202 (British Literature); 221-222 (Literature of the Western World); 231-232-233 (American Literature); 251-252-253 (Introduction to Literary Genres).

ENGLISH MAJOR

The English major consists of ten courses at the 300-400 level in one of the following concentrations:

Creative Writing Concentration
• A two-course sequence in creative writing;
• three other writing courses;
• four courses in literature, two of which must be before 1900, and at least one of those before 1800;
• one course in language, theory, cultural, ethnic, or gender studies;
• one or more courses from any of the department’s offerings, including criticism, film, folklore, language, literature, rhetoric, and writing (necessary only if student has overlapped courses in the two preceding categories). Courses may count in more than one category.

Literature Concentration
• English 376 (Colloquium in Literature), to be taken, if possible, near the beginning of the student’s major program;
• four courses in literature before 1900, including at least two courses before 1800; one course in American literature;
• one course in twentieth-century literature;
• one course in language, theory, cultural, ethnic, or gender studies;
• two or more courses from any of the department’s offerings, including criticism, film, folklore, language, literature, rhetoric, and writing. Courses may count in more than one category.

Rhetoric and Writing Concentration
• A three-course package in rhetoric and writing;
• one other course in rhetoric or writing;
• four courses in literature, two of which must be before 1900, and at least one of those before 1800;
• one course in language, theory, cultural, ethnic, or gender studies;
• one or more courses from any of the department’s offerings, including criticism, film, folklore, language, literature, rhetoric, and writing. Courses may count in more than one category.
Technical Communications Concentration

- A three-course package in technical communications;
- one other course in rhetoric or writing;
- four courses in literature, two of which must be before 1900, and at least one of those before 1800;
- one course in language, theory, cultural, ethnic, or gender studies;
- one or more courses from any of the department’s offerings, including criticism, film, folklore, language, literature, rhetoric, and writing. Courses may count in more than one category.

See departmental brochure, Undergraduate Study in English, for a list of courses that satisfy the distribution, package, and sequence requirements for the various areas.

Individualized Program Concentration

The Director of Undergraduate Studies is empowered to approve individualized programs developed by students in consultation with their advisors. These programs should be designed to achieve academically sound objectives that are not addressed by the above requirements.

Honors Concentration

For students who qualify, the English Department offers specially designed courses at the freshman, sophomore, junior and senior levels. The freshman and sophomore Honors courses are enriched versions of regular sections in composition, and in American and British literatures. To be given “Honors” in English on the transcript, a student must have achieved a 3.0 or better GPA, a 3.5 or better grade point in English courses, and grades of A or B in English 398 and 498.

Minor in English

- An English minor consists of at least 15 semester hours of English courses at the 300-400 level.
- An English minor with Technical Communication Emphasis consists of at least 15 semester hours of English courses chosen from the following: at least three courses in technical communication (chosen from 360, 460, 462, 466, or any special topics course being offered in technical communication); one course in expository writing, argumentative writing, language, rhetoric, or another technical communication course (chosen from 355, 360, 371, 372, 455, 460, 462, 466, 470, 471, 472, 484, 485, 495, 496; and one other 300 or 400 level English course.

Certification for Teaching

Students planning to teach English in public schools should consult the College of Education, Health, and Human Sciences.

French

See Department of Modern Foreign Languages and Literatures.

Department of GEOGRAPHY

http://web.utk.edu/~utkgeog/

Professors

B.A. Ralston (Head), Ph.D. Northwestern; C.S. Aiken, Ph.D. Georgia; T.L. Bell, Ph.D. Iowa; R.A. Foresta, Ph.D. Rutgers; C.P. Harden, Ph.D. Colorado (Boulder); S.P. Horn, Ph.D. California (Berkeley); L.M. Pulsipher, Ph.D. Southern Illinois; J.B. Rehder, Ph.D. Louisiana State; T.J. Wilbanks (Adjunct), Ph.D. Syracuse

Associate Professors

T.J. Blasing (Adjunct), Ph.D. Wisconsin; M.A. Brown (Adjunct), Ph.D. Ohio State; M.M. Gripshover (Adjunct), Ph.D. Tennessee; Cheng Liu (Adjunct), Ph.D. Tennessee; R. McKeown (Adjunct), Ph.D. Oregon; K. Orvis, Ph.D. California (Berkeley); S.L. Shaw, Ph.D. Ohio State

Assistant Professors

A. Drever, Ph.D. California (Los Angeles); H. Grissino-Mayer, Ph.D. Arizona; G. Harrison (Adjunct), Ph.D. Tennessee

The Department of Geography provides a comprehensive program that reflects the discipline’s three main areas: human geography, physical geography, and spatial analysis. The department’s courses allow students to explore the linkages between human activities and natural systems. Students taking geography courses should develop factual knowledge, critical thinking, and analytic skills. Training in geography allows students to know where things are located, why they are located where they are, how and why places differ, how human activity shapes and is shaped by the natural environment, and how to analyze human-environment interactions.

GEOGRAPHY MAJOR

Geography 131 and 132 are prerequisites to the major, which consists of 27 hours as follows: Geography 310 and 499; either 320, 421, or 423; either 340 or 351; one course from among 410, 411, 412, 413 or 415; one course from among 361, 363, 365, 371, 372, 373, 375, or 379; and 9 additional credits, at least 6 of which must be taken at the 400 level. No more than 3 hours of Geography 490 may be counted toward the major.

Students who enter the major with more than 60 hours of credit, and who have completed a laboratory science sequence other than Geography, may petition the department to substitute certain upper division physical geography courses for 131 and/or 132.

Honors Concentration

Students who have an overall GPA of 3.2 may elect to participate in an enrichment program that involves the successful completion of Geography 497 and 498 (Honors: Senior Thesis) under the direction of a faculty mentor. An approved written copy of the thesis must be submitted to the Department of Geography. Interested students should consult their advisor for details about participation.

Minor in Geography

The minor in Geography consists of 15 hours of Geography courses at the 300 level or above. Geography 490, 491, 492, 493 may not be counted toward the minor without departmental permission.
German
See Department of Modern Foreign Languages and Literatures.

Greek
See Department of Classics.

Department of HISTORY
http://web.utk.edu/~history/

Professors
P. Brummett, Ph.D. Chicago; L. Crabtree (Provost), Ph.D. Minnesota; W. Cutler, Ph.D. Texas; W.W. Farris, Ph.D. Harvard; D. Feller, Ph.D., Wisconsin; A. Mayhew (Interim Vice Provost), Ph.D. Texas; R.J. Norrell (Bernadotte Schmitt Professor), Ph.D. Virginia; W.B. Wheeler, Ph.D. Virginia

Associate Professors
T.A. Diacon (Head), Ph.D. Wisconsin; J. Appier, Ph.D. California (Riverside); S.V. Ash, Ph.D. Tennessee; R. J. Bast, Ph.D. Arizona; J. Bohstedt, Ph.D. Harvard; O. Bradley, Ph.D. Cornell; T.E. Burman, Ph.D. Toronto; C.G. Fleming, Ph.D. Duke; L. Glover, Ph.D. Kentucky; C.A. Higgs, Ph.D. Yale; V.G. Liulevicius, Ph.D. Pennsylvania; G.K. Pielher, Ph.D. Rutgers; P.J. Pinckney, Ph.D. Vanderbilt

Assistant Professor
J.P. Dessel, Ph.D. Arizona; H. DeWeerdt, Ph.D. Harvard; M. Kulikowski, Ph.D. Toronto; L. Liu, Ph.D. California (San Diego); J. Sahadeo, Ph.D. Illinois; G. White, Ph.D. Temple

The department’s program is designed to provide students with a knowledge of their cultural traditions and of their world, past and present, and thus to prepare them for the responsibilities of citizenship in today’s complex society. Students take history courses to develop their skills in thinking, reading, writing and speaking; to understand the links between past, present and future; and to assist them in their search for personal identity.

The department welcomes non-majors in its courses. Few history courses have formal prerequisites.

HISTORY MAJOR

Majors in history should prepare their programs in consultation with a departmental faculty advisor. A student may not declare a History major until he/she has completed both semesters, with a grade of C+ or better in each course, of a survey chosen from the following: 221-222, 227-228, 241-242, 247-248, 261-262; or any two one semester courses from any of these sequences. AP (with a score of 4 or 5) or transfer credit is acceptable to fulfill this requirement. History 241-242 (or honors equivalent) or 261-262 are prerequisites to a major which consists of 30 hours, including:

- 6 hours of History 221-222 (or the Honors equivalent);
- 24 upper-division hours, including: one course in European history; one course in United States history; two courses in the history of Latin America, Asia, or Africa, at least one of which must be in Asia or Africa; and one additional course dealing predominantly with a period prior to 1750.

Honors Concentration

The Department of History offers Honors sections of the Western Civilization and United States history survey courses. Some entering freshmen are invited to participate; other interested students may apply. These survey courses are open to non-majors. A grade of C+ or less in any part of the freshman-sophomore honors sequence will render the student ineligible for further honors work in history.

An Honors concentration requires successful completion of 307 and a senior thesis (407-408) with a grade of B or above. Altogether the Honors concentration consists of 33 hours, including 30 hours as outlined in the Bachelor of Arts major above, plus 307. All juniors who are declared history majors with an overall GPA of at least 3.0 are invited to join the Junior-Senior Honors Program. Students interested in honors work at any level should consult the department’s honors coordinator.

Minor in History

History 241-242 or 261-262 (or Honors equivalents) are prerequisites to a minor which consists of 15 hours of courses numbered 200 or above, including at least: 6 hours in United States history; and 9 upper-division hours.

INTERDISCIPLINARY PROGRAMS

Director
Don Richard Cox, College of Arts and Sciences

In keeping with the philosophy that integration of knowledge is as important as proficiency in a given field, the College of Arts and Sciences has combined the resources of several departments to offer a series of interdisciplinary majors and minors. These programs are as follows: African and African-American Studies, American Studies, Asian Studies, Cinema Studies, Comparative Literature, Environmental Studies, Judaic Studies, Latin American Studies, Legal Studies, Linguistics, Medieval Studies, Urban Studies, and Women’s Studies. See individual program descriptions below for the concentration and/or minor requirements.

Interdisciplinary Programs Major • African and African-American Studies Concentration

Chair
William J. Dewey, School of Art

Associate Professors
A. Jalata, Sociology, Ph.D. State University of New York (Binghamton); G. White, Jr., Ph.D. Temple

African and African-American Studies 201-202 are required in the concentration which consists of 24 hours from the African and African-American Studies curriculum. At least 15 hours must represent upper-division credits. Majors are required to take African and African-American Studies 431, preferably in their senior year. A maximum of 6 hours in African and African-American Studies 492 and 493 combined can be applied toward the African and African-American Studies major. In planning their program, majors must include courses from at least 2 other departments which crosslist courses with African and African-American Studies in addition to the African and African-American Studies core course offerings.
Minor in African and African-American Studies

African and African-American Studies 201-202 are required in the minor which consists of 15 hours at least 9 of which must be upper-division credits. A maximum of 3 hours in African and African-American Studies 492 and 493 combined can be applied to a minor. The minor must include courses from at least two other departments which crosslist courses with African and African-American Studies in addition to the African and African-American Studies core course offerings.

Interdisciplinary Programs Major • American Studies Concentration

Chair
Benita J. Howell, Anthropology

English 231 and either 232 or 233 are prerequisite to a concentration in American Studies which consists of 27 upper-division hours including American Studies 310; at least two approved American History courses; and six hours of approved courses chosen from the following disciplines: anthropology, economics, political science, or sociology. Courses in the concentration will be chosen in consultation with an American Studies advisor, from a list approved by the program, in such a way that at least 3 courses help the student achieve a focus within the field. One course in the student’s curriculum must specifically focus upon one or more American ethnic minority cultures. An additional 3-6 hours of American Studies 493 (Independent Study) are recommended for majors in their senior year. A list of approved elective courses is published annually.

All majors and prospective majors should contact the Chair of the program.

Minor in American Studies

The American Studies minor consists of at least 15 hours of coursework chosen from the program’s list of electives, including American Studies 310 and twelve additional hours from at least two different disciplines.

Interdisciplinary Programs Major • Asian Studies Concentration

Chair
Miriam L. Levering, Religious Studies

Prerequisite to the concentration is Asian Studies 101-102. Corequisite to the concentration is competence in a major Asian language of the chosen geographical-cultural area. Competence is defined as the successful completion of the 200-level sequence of that language, or by demonstration of equivalent mastery.

The Asian Studies concentration consists of 26 credit hours from the upper-division courses of Asian Studies and approved departmental offerings. Twelve of the hours must be taken from courses listed within one of the four geographical-cultural areas (Islamic World; South Asia; China; Japan), and 6 of those 12 hours must come from Subdivision A and 6 from Subdivision B. Subdivision A includes Art, Literature, Music, Philosophy, and Religious Studies; Subdivision B includes Anthropology, Economics, Geography, History, Political Science, and Sociology.

Six of the 26 hours must be taken from courses listed for other geographical-cultural areas.

Minor in Asian Studies

The Asian Studies minor consists of Asian Studies 101-102 and 15 credit hours at the 200 level and above. Twelve credit hours must be taken from courses within one of the four geographical-cultural areas. Six credit hours must come from Subdivision A and 6 from Subdivision B. Three hours must be taken from courses in another geographical-cultural area.

Interdisciplinary Programs Major • Minor in Cinema Studies

Chair
Christine Holmlund, Modern Foreign Languages and Literatures

The Cinema Studies minor consists of 15 hours, including Cinema Studies 281; 3 hours chosen from Cinema Studies 235, 236, or Electronic Media 330; and 9 additional hours from any courses in Cinema Studies, courses cross-listed with Cinema Studies, or from the following list of approved courses: Electronic Media 275, 330, 430. It is strongly recommended that Cinema Studies 281 be taken before any other courses in the minor.

For further information about the minor, consult the chairperson of the Cinema Studies Program. Courses related to Cinema Studies and not listed above may be applied to the minor with the approval of the chair of the program.

Interdisciplinary Programs Major • Comparative Literature Concentration

Chair
Carolyn R. Hodges, Modern Foreign Languages and Literatures

Students concentrating in Comparative Literature are strongly encouraged to acquire a working knowledge of a second foreign language, especially if they hope to pursue comparative literature on the graduate level.

A concentration in Comparative Literature consists of 27 hours including Comparative Literature 202 and 401-402, and 9 hours of literature in a foreign language in courses numbered 300 or above. The remaining 9 hours should include literature courses, either in English or in a foreign language, numbered 300 or above, from at least two of the following departments: Classics, English, Modern Foreign Languages and Literatures, and Religious Studies. Certain courses in Philosophy, Theatre, and Interdisciplinary Programs may be substituted with the approval of the chairperson of the Comparative Literature Program.

Minor in Comparative Literature

A minor in Comparative Literature consists of 18 hours including Comparative Literature 202 and either Comparative Literature 401 or 402, 6 hours of literature in a foreign language in courses numbered 300 or above, and 6 hours of literature courses numbered 300 or above in a different department. These 6 hours may be either in English or in a foreign language and should be chosen from the following departments: English, Modern Foreign Languages and Literatures, and Religious Studies. Certain courses in Philosophy, Theatre, and Interdisciplinary Programs may be substituted with the approval of the chairperson of the Comparative Literature Program. Minors in comparative literature are strongly encouraged to continue study of a foreign language beyond the minimum requirement.
Interdisciplinary Programs Major • Environmental Studies Concentration

Chair
Michael McKinney, Earth and Planetary Sciences

The concentration in Environmental Studies provides sound scientific, socio-economic, and philosophical background for understanding the earth’s environment with an opportunity to minor in one of the many environmentally related curricula offered by the various colleges within the University.

Prerequisites to the concentration in Environmental Studies are Biology 130-140 or Botany 110-120; Chemistry 120-130; Geology 101; Geography 131; Mathematics 123-125 or 141-142 or 151-152; Economics 201; and Biology 250.

The concentration consists of a core and a specialty. The core includes Geology 202 plus: (a) 12 hours from: History 346, Sociology 360, Philosophy 346, Economics 462, Agriculture and Natural Resources 333, Journalism 451, Geology 490, (b) 3 hours from: Geology 455, Geography 433, Geography 436 or Ecology/Evolution 484; (c) 3 hours from: Geography 334, Geography 434, or Environmental and Soil Sciences 462. The specialty is satisfied by meeting the course requirements listed for a minor in any one of the environmentally related curricula offered by the various colleges of the University with a grade of C or better. The specialty will require 15-18 hours as specified by the chosen department. Curricula that would be suited for an Environmental Studies concentration include, but are not limited to: Biosystems Engineering and Environmental Science, Plant Sciences and Landscape Systems, Wildlife and Fisheries Science, Forestry, Chemistry, Geography, Geology, Biology, Sociology, Economics, Political Science, Communication, or Business Administration.

Interdisciplinary Programs Major • Judaic Studies Concentration

Chair
Gilya Gerda Schmidt, Religious Studies

The concentration in Judaic Studies offers a course of study that treats Judaism as a historically evolving and culturally specific enterprise. The concentration explores Jewish culture, religion and heritage through literature, philosophy and history.

A multi-disciplinary combination of courses permits critical reflection about topics and issues in a world civilization and cross-cultural context.

The concentration consists of at least 27 hours at the 300 level or above, distributed as follows: (a) Religious Studies 381, History 383, and 12 hours from Religious Studies 311, 312, 320, 385, 386, 405, History 370, 384; (b) 9 hours selected from Art History 425, 431, 475, German 350, History 369, 395, 484, Philosophy 322.

Students should contact the program advisor early in planning a Judaic Studies major.

Minor in Judaic Studies

The Judaic Studies minor consists of Religious Studies 381, History 383, and 9 hours selected from the Judaic Studies major concentration.

Interdisciplinary Programs Major • Language and World Business Concentration

For a complete list of requirements, see Department of Modern Foreign Languages and Literatures.

Interdisciplinary Programs Major • Latin American Studies Concentration

Chair
Michael Handelsman, Modern Foreign Languages and Literatures

The concentration consists of two optional tracks: General Studies or Brazilian Studies. Each program requires 27 hours, of which 12 are in core courses, including Latin American Studies 401 and 402, three hours of either History 360 or 361, and three hours of an approved Spanish or Portuguese literature/culture course at either the 300 or 400 level. In addition to the core courses, the General Studies track will consist of fifteen hours selected from courses offered by three different participating departments. The Brazilian Studies track will consist of fifteen hours beyond the core courses including a minimum of six hours in The University of Tennessee’s Summer Study Program in Fortaleza, Brazil (or other programs in Brazil approved by the director of Latin American Studies) and up to nine hours of approved courses that focus on Brazil. It is strongly suggested that Latin American Studies 251-252 be taken as a prerequisite.

Minor in Latin American Studies

The minor consists of 18 hours including Latin American Studies 251-252, three hours of an approved Spanish or Portuguese literature/culture course at either the 300 or 400 level, and nine additional hours selected from courses offered by three different participating departments.

A practical working knowledge of Spanish or Portuguese is a prerequisite for majors and minors. All students are strongly encouraged to earn credit hours through UT’s Latin American Studies Abroad Program at the Federal University of Ceara in Fortaleza, Brazil. Other foreign study programs are also available for Brazil and Spanish-speaking Latin America.

For further information, consult the Chairperson of the Latin American Studies Program.

Interdisciplinary Programs Major • Legal Studies Concentration

Chair
John Scheb, Political Science

The Legal Studies concentration places the study of law within the context of a liberal arts education. This concentration offers a course of study that treats law as a historically evolving and culturally specific enterprise. The concentration seeks to attract students interested in exploring the ways in which law and legal institutions shape and are shaped by values, behavior, communication patterns, and organization of social, economic, and political systems. A multidisciplinary combination of courses permits critical reflection about how law and social life are interconnected history and culturally. The program is designed to provide education about law and legal culture. It should not be viewed as a preferred avenue for admission to law school.
Specific objectives of the program are to:
• Foster an appreciation for the larger context within which law-based phenomena are developed and nourished;
• Comprehend the connections between law and other components of society; promote an interest in studying how law shapes, and is shaped by the larger social, behavioral, political, historical, and cultural context; present an interdisciplinary program that speaks to the need to address problems about law that will face us in the next century; offer an integrated program drawn from existing curriculum and faculty.

Students should contact program advisors early in planning a Legal Studies concentration. It is strongly recommended that Sociology 455 (Society and Law) be taken before selecting electives. Other law-related courses consistent with the purposes and objectives of the major may be approved through consultation with the Chair of the Legal Studies Committee.

The concentration consists of 27 hours, including either Political Science 330 or Sociology 455 and 24 hours of upper-division courses distributed among five categories:
• Analysis — 3 hours from Communication 300, English 496, Sociology 331;
• Processes—Sociology 451, and 3 hours from Political Science 430, 442;
• Perspectives—3 hours from English 490, Political Science 330, Philosophy 392;
• Historical and Global Dynamics — 3 hours from Classics 362, Political Science 470;
• Issues—6 hours from Communication 400, Philosophy 344, Political Science 431, Speech Communication 469, Women’s Studies 340.

The remaining three hours are to be chosen from one of the five categories or an approved elective.

**Interdisciplinary Programs Major • Linguistics Concentration**

**Chair**
Bethany K. Dumas, English

This concentration offers a broad exposure to the various fields of linguistics (including historical, descriptive, theoretical and applied linguistics) along with an opportunity to study areas where linguistics overlaps with other disciplines such as psycholinguistics, socio-linguistics, and speech pathology. The program of study is designed to prepare a student for graduate work in linguistics or related areas or to serve as a general survey of language and linguistics. The program of study provides the additional possibility of emphasizing the teaching of English as a second language for the student interested in language-related employment at the Bachelor of Arts level.

Students should consult program advisors early in planning a Linguistics major or minor. Linguistics 200 is highly recommended. Audiology and Speech Pathology 305 should be taken as soon as possible. Other 300-level courses should, if possible, be completed before 400-level courses are begun.

**Co-requisites**
• Completion of a third year of foreign language study;
• A two-semester sequence of a non-Indo-European language to be selected from the following: Asian Languages 131-132 (Chinese); Asian Languages 151-152 (Japanese); Asian Studies 121-122 (Modern Arabic); Asian Studies 141-142 (Modern Hebrew); Educational Interpreting 223, 226 (American Sign Language); Religious Studies 309-310 (Classical Hebrew); or other non-Indo-European languages offered in a two-course sequence and approved by the Linguistics Committee.

**Concentration**
30 hours distributed as follows:
• 21 hours composed of: Audiology and Speech Pathology 305; English 371, 372, 471; Linguistics 423, 425, 426;
• 9 hours of the following, selected in consultation with a Linguistics advisor from: Anthropology 411; Audiology and Speech Pathology 302, 320; Foreign Language/ESL Education 455; French 421, 422; Linguistics 400, 429, 431, 435, 436, 472, 474, 475, 476, 477, 485, 490, 491, 492, 493; Philosophy 472; Psychology 400, 424; Spanish 421, 422; Speech Communication 300, 320; Theatre 326.

**Minor in Linguistics**
A minor in Linguistics shall consist of 18 credit hours composed of:
• Either English 471 or 3 hours selected in consultation with a Linguistics advisor from Anthropology 411; Audiology and Speech Pathology 302, 320; Foreign Language/ESL Education 455; French 421, 422; Linguistics 400, 429, 431, 435, 436, 472, 474, 475, 476, 477, 485, 490, 491, 492, 493; Philosophy 472; Psychology 400, 424; Spanish 421, 422; Speech Communication 300, 320; Theatre 326;
• 15 additional hours as follows: Audiology and Speech Pathology 305; English 371 or 372; Linguistics 423 and 425 or 426; plus 3 hours selected in consultation with a Linguistics advisor.

**Interdisciplinary Programs Major • Medieval Studies Concentration**

**Chair**
Laura L. Howes, English

A concentration in Medieval Studies focuses upon culture and society from the collapse of the Roman Empire to the 16th century. Such a concentration offers the opportunity to deepen one’s self-awareness and broaden one’s view of the range of human possibilities by studying a very different and remote culture, its conditions of life, social and political institutions, values and ideals, and modes of perception and expression.

Latin is the most appropriate language for students in the Medieval Studies concentration and is essential for those who plan to continue their studies in graduate school. In addition, students planning to go on to graduate school are strongly advised to supplement their Medieval Studies concentration with extensive work in one of the traditional disciplines.

A concentration in Medieval Studies consists of Medieval Studies 201 and 403 and 21 hours of upper-division courses concerned primarily with the medieval experience, divided among the following three categories:
• history, philosophy, political science, and religious studies;
• language and literature;
• the arts: history of art, architecture, music, and speech and theatre.

Courses should either form a related pattern (for example, courses in the literature and history of Medieval England or Italy) or should revolve around a particular discipline or two closely related disciplines (for example, courses in the history of art and architecture).

**UPPER-DIVISION COURSES FOR CONCENTRATION IN MEDIEVAL STUDIES**

**Category #1**
- History, Philosophy, and Political Science: History 312 Medieval History: 300-1100 (3); History 313 Medieval History: 1100-1400 (3); History 330 History of England to 1688 (3); History 334 History of Germany to 1815 (3); History 369 History of the Middle East (3); History 474 Studies in Medieval and Early European History (3); Philosophy 322 Medieval Philosophy (3); and Political Science 475 Ancient and Medieval Political Thought (3).

**Category #2**
- Language and Literature: Classics 435 Medieval Latin (3); English 371 Foundations of the English Language (3); English 401 Medieval Literature (3); English 402 Chaucer (3); French 410 Medieval French Literature (3); Italian 401 Dante and Medieval Culture (3); and Italian 402 Petrarch and Boccaccio (3).

**Category #3**
- The Arts: Architecture 415 Seminar in Medieval Architecture (3); Art History 425 Early Christian and Byzantine Art to 1350 (3); Art 441 Northern European Painting, 1350-1600 (3); Art History 431 Medieval Art of the West, 800-1450 (3); Art History 451 The Art of Italy, 1250-1400 (3); and Music History 210 History of Music to 1750 (3).

**Minor in Medieval Studies**

A minor in Medieval Studies consists of Medieval Studies 201 and 403 and 12 additional hours distributed among the categories listed above for the major. Each student’s program, major or minor, must be approved in advance by the Medieval Studies Coordinating Committee chairperson.

**Interdisciplinary Programs Major • Women’s Studies Concentration**

**Chair**
- Cheryl Brown Travis, Psychology

Women’s Studies encourages inquiry into the full range of the human experience by raising new questions and opening new areas of research concerning women. The discipline enriches the traditional Arts and Sciences curriculum by adding new perspectives on women’s lives and accomplishments. Women’s Studies can broaden the education of both male and female students by helping them to understand the limitations placed on both sexes by narrowly defined sex roles. Wherever there is a need to understand women and an interest in the new roles they are playing in society, Women’s Studies can enhance a student’s career preparation and opportunities.

The concentration in Women’s Studies consists of 30 semester hours including one of the Images of Women in Literature courses (either 210 or 215), Women in Society (220), Emergence of the Modern American Woman (310), at least three hours of Independent Study (493), and at least one course from each of the three major areas: Women’s Heritage (383, 432, 453, 466, 483), Contemporary Issues (320, 340, 360, 375, 382, 410, 425, 434, 476), and Literature and the Arts (330, 332, 422, 433, 469).

Because its content varies, 400 may be included in any of these areas. As its content varies, 400 may be included in any of these areas. Students are encouraged to take at least nine hours in one of these areas.

**Minor in Women’s Studies**

The Women’s Studies minor consists of one of the Images of Women in Literature courses (either 210 or 215), Women in Society (220), and an additional 12 hours of upper-division Women’s Studies courses. Approved special topics courses related to Women’s Studies may also be applied toward a major or a minor.

**Italian**

See Department of Modern Foreign Languages and Literatures.

**Japanese**

See Department of Modern Foreign Languages and Literatures.

**Judaic Studies**

See Interdisciplinary Programs.
Latin
See Department of Classics.

Latin American Studies
See Interdisciplinary Programs.

Legal Studies
See Interdisciplinary Programs.

Linguistics
See Interdisciplinary Programs.

Department of MATHEMATICS
http://www.math.utk.edu/

Professors
J.B. Conway (Head), Ph.D. Louisiana State; V. Alexiades, Ph.D. Delaware; D.F. Anderson, Ph.D. Chicago; R.J. Daverman, Ph.D. Wisconsin; D.E. Dobbs, Ph.D. Cornell; J. Dydak, Ph.D. Warsaw (Poland); L.J. Gross, Ph.D. Cornell; T.G. Hallam, Ph.D. Missouri; D.B. Hinton, Ph.D. Tennessee; L.S. Husch, Ph.D. Florida State; G.S. Jordan, Ph.D. Wisconsin; O. Karakashian, Ph.D. Harvard; B.A. Kuperschmidt (UTSI), Ph.D. M.I.T.; S. Lenhart, Ph.D. Kentucky; B.S. Rajput, Ph.D. Illinois; S. Mulay, Ph.D. Purdue; C.P. Plaut, Ph.D. Maryland; S. Richter, Ph.D. Michigan; K.C. Reddy (Space Institute, Tullahoma), Ph.D. Indian Institute of Technology; J. Rosinski, Ph.D. Wroclaw University; P.W. Schaefer, Ph.D. Maryland; H. Simpson, Ph.D. California Institute of Technology; R.P. Soni, Ph.D. Oregon State; K.R. Stephenson, Ph.D. Wisconsin; C. Sundberg, Ph.D. Wisconsin; M. Thistlethwaite, Ph.D. University of Manchester (England); W.R. Wade, Ph.D. California (Riverside); C.G. Wagner, Ph.D. Duke

Associate Professors
C. Collins, Ph.D. Minnesota; X. Feng, Ph.D. Purdue; A. Freire, Ph.D. Princeton; S. Gavrillets, Ph.D. Moscow State; B. Guan, Ph.D. Massachusetts; K. R. Kimble (Space Institute, Tullahoma), Ph.D. Ohio State; Y. Kuo, Ph.D. Cincinnati; B. K. Soni (Space Institute, Tullahoma), Ph.D. Texas; J. Xiong, Ph.D. North Carolina, Chapel Hill

Graduate Professors
X. Chen, Ph.D. Case Western Reserve; R. Davis, Ph.D. Tennessee; J. Denzler, Ph.D. ETH (Zurich); J. Dwyer, Ph.D. Ireland; Y. Kachi, Ph.D. Tokyo; T. Schulze, Ph.D. Northwestern; G.H. Tordova, Ph.D. Moscow State; P. Tzermias, Ph.D. California (Berkeley)

Lecturers

All entering freshmen and all other students who have not completed a college level mathematics course, except students who have received AP calculus credit, must take The University of Tennessee Mathematics Placement Exam before enrolling in a mathematics course. Placement in the appropriate course will be determined by the score on the exam. Ordinarily, a student will not be allowed to enroll in a course at a level above that determined by his or her placement exam score. In exceptional circumstances, students will have the right to appeal their placement to the Mathematics Department. The exam will be administered during summer orientation and at designated times during the fall, spring, and summer registration.

MATHEMATICS MAJOR

The undergraduate Mathematics major is designed to provide a broad introduction to mathematics which serves as preparation for a wide variety of careers. The requirements below, which provide a solid introduction to four of the core components of mathematics, should be regarded as minimal preparation for careers in mathematics or closely related mathematical fields. Students with special interests and talents are encouraged to take as many other mathematics courses as their schedule permits.

Prerequisites to the major are Mathematics 141-142 (or Honors version: 147-148) and 171 or CS 102.

Major requirements consist of 37 semester hours of mathematics courses including (1) Mathematics 231, 241 (or 247), 251 (257), 300; and (2) eight additional courses at the 300-400 level (except 399, 400, 401, 405, 411 and 490) satisfying the following conditions:

• At least one course must be taken from each of the following categories: Algebra: 351, 455-56 (457-58); Analysis: 341, 445-46 (447-48); Numerical Analysis: 323, 370, 471-472; Probability Statistics: 323, 423-24 (423-25).

• At least one 400-level two-semester sequence must be taken from the list above.

• Computer Science 311 and Computer Science 380 may be used as upper-division math electives in part (2).

There are many careers one can pursue with a mathematics major. Sample programs for three different goals are listed below. Additional information is available in the Mathematics Department Office.

INDUSTRIAL EMPLOYMENT

Freshman

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<thead>
<tr>
<th>Hours Credit</th>
<th>Mathematics 141-142 (or 147-148) and 171</th>
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<tr>
<td>English Composition</td>
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<tr>
<td>Foreign Language (beginning level, preferably French, German, or Russian)</td>
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<tr>
<td>Lab Science Distribution Requirement</td>
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Sophomore

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<tr>
<td>Social Science Distribution Requirement</td>
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<tr>
<td>Foreign Language (completion of secondary level)</td>
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<td>6-8</td>
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<td>Elective</td>
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Junior

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<td>Social Science Distribution Requirement</td>
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<td>Electives</td>
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<td>Mathematics 141-142 (or 147-148) and 171</td>
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<td>Lab Science Distribution Requirement</td>
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<td>Sophomore</td>
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<tr>
<td>Mathematics 231, 241 (or 247), 251 or (257), and 300</td>
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<td>Non-US History Distribution Requirement</td>
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<td>Social Science Distribution Requirement</td>
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<td>Junior</td>
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<tr>
<td>Mathematics 323 (or 423), 431 (or 421), 371, 435 (or 461)</td>
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</tr>
<tr>
<td>Humanities Distribution Requirement</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Social Science Distribution Requirement</td>
<td>3</td>
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<tr>
<td>Electives</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Senior</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mathematics 445-446 (or 447-448) and 455-456 (or 457-458)</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>Upper Level Distribution Requirement (may include Mathematics 400 or 411)</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Electives (must include at least 7 upper-division hours)</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>124 minimum</td>
</tr>
</tbody>
</table>

### Preparations for Graduate School

- **Freshman**
  - Mathematics 141-142 (or 147-148) and 171
  - English Composition
  - Foreign Language (beginning level, preferably French, German, or Russian)
  - Lab Science Distribution Requirement
- **Sophomore**
  - Mathematics 231, 241 (or 247), 251 or (257), and 300
  - Non-US History Distribution Requirement
  - Social Science Distribution Requirement
  - Foreign Language (completion of secondary level)
  - Electives
- **Junior**
  - Mathematics 323, 351, 341, 371
  - Humanities Distribution Requirement
  - Social Science Distribution Requirement
  - Electives
- **Senior**
  - Mathematics 445-446, 460, 421 (or 431)
  - Upper Level Distribution Requirement (may include Mathematics 400 or 411)
  - Electives (must include at least 7 upper-division hours)

### Honors Concentration

Candidates for an Honors degree in Mathematics must fulfill all of the requirements for the Bachelor of Science degree in Mathematics, but take nine courses (rather than eight) at the 300-400 level and take two 400 level two-semester sequences (rather than one). The grade point average computed on the nine 300-400 level courses mentioned above will determine the honors category: GPA at least 3.4 — Honors; GPA at least 3.6—High Honors; GPA at least 3.8—Highest Honors. Students with more than nine courses at the 300-400 level may designate which courses will be used to compute these GPA’s.

### Minor in Mathematics

Prerequisite to the minor is Mathematics 141-142 (or 147-148). The minor consists of Mathematics 231, 241, 251, 300 and nine additional hours at the 300-400 level (except 399, 401, 405, and 490). Computer Science 370 may be substituted for three of those hours. The grade in each of these courses must be at least C.

### Medieval Studies

See Interdisciplinary Programs.
Microbiology is the study of organisms so small that they must be viewed with a microscope. These organisms include bacteria, yeasts, molds, protozoa and viruses. Microbiology is one of the fastest growing areas of science. The concentration in Microbiology is designed to furnish necessary experience in academic and practical skills to prepare graduates for immediate entry into the job market or for continuing graduate education in pure or applied biological sciences. Graduates with a concentration in Microbiology find positions in the areas of medical, agricultural, food, industrial, or pharmaceutical microbiology. In addition, many microbiologists pursue careers in environmental microbiology and bioremediation. Other students become teachers, science writers, technical librarians, or managers of scientific companies. The Microbiology concentration also provides an excellent background for students who plan to enter medical school, veterinary school or other health science graduate programs.

Students wishing to emphasize study in this area elect to major in Biological Sciences with a concentration in Microbiology. See the description of the Biological Sciences major under Division of Biology for requirements.

**Assistant Professors**

M.Y. Sangster, Ph.D. Western Australia, Perth; T.E. Sparer, Ph.D. Emory University School of Medicine; S. Wilhelm, Ph.D. University of Western Ontario

**Research Assistant Professors**

J. Fleming, Ph.D. Tennessee; U. Kumaraguru, Ph.D. University of Madras, Madras, India; A.C. Layton, Ph.D. Purdue; S. Piffiner, Ph.D. Florida State; S. Ripp, Ph.D. Oklahoma State; J. Sanseverino, Ph.D. Lehigh

Programs in the Department of Modern Foreign Languages and Literatures provide students with courses in language, literature, linguistics, and culture. Along with developing language proficiency in reading, writing, speaking, and listening comprehension, the courses prepare students for study abroad and offer learning experiences that foster understanding and appreciation of global issues and multicultural perspectives.

**Placement Examination**

Students who have had previous work (either two or more years in high school or one year in college) in Chinese, French, German, Italian, Japanese, Portuguese, Russian, or Spanish should take a placement test to determine the appropriate level course for which to register. Placement tests are given for incoming students during summer orientation and throughout the year. Please contact the department for further details.

**Proficiency Examinations**

Students who have acquired a knowledge of French, German, Italian, Russian, or Spanish should request a proficiency test. A student earning a grade of C or better will receive credit for an appropriate number of courses. Superior students are encouraged to proceed as rapidly as their achievement permits.

**Study Abroad**

Five summer study abroad opportunities are available to students through the department. The department sponsors programs in Brazil, France, Italy, Mexico, and Spain. Students can earn up to six credit hours by participating in these programs. In most cases, the courses will fulfill part or all of the foreign language requirement (completion of the elementary or intermediate level). Upper-division classes in literature, culture, and language are also available for major and minor credit. Participation in these programs will satisfy the foreign study requirements for the Language and World Business degree. A faculty member accompanies students on the program. In addition to formal classes held at a major university in the city, group excursions to cultural and historical sites are an integral part of the programs. For more information concerning prerequisites, lodging arrangements, costs, and dates of an individual program, contact the Department of Modern Foreign Languages and Literatures, 701 McClung Tower.

Students are also encouraged to study abroad, particularly through participation in the University’s International Student Exchange Program (ISEP). The department is also prepared to recommend summer study programs and year abroad programs for students who are interested in foreign study. Credits from recognized foreign study programs can readily be transferred to The University of Tennessee. For qualified students, the department also offers Asian Languages 491 Foreign Study, German 491 Foreign Study, and Russian 491 Foreign Study. Students should consult the department before registering for the foreign study course.

**FRENCH MAJOR**

The French major consists of 30 hours in courses numbered 333 and above. (French 300 does not count toward the major, but is recommended for students needing grammar review). All majors must have the following courses (or their equivalent with consent of the department): 333-334; 351-352; 421; 422; 440. Exceptional students may substitute a 400-level course for either 333 or 334, with consent of the department.

**Department of Modern Foreign Languages and Literatures**

http://web.utk.edu/~mflf/

**Professors**

C. R. Hodges (Head), Ph.D. Chicago; P.E. Barrette, Ph.D. California (Berkeley); P. Brady (Shumway Chair of Excellence), Ph.D. Universite de Paris (Sorbonne); E.J. Campion, Ph.D. Yale; B. Creel, Ph.D. California (Davis); S. DiMaria, Ph.D. Wisconsin; M.H. Handelsman (Distinguished Professor), Ph.D. Florida; C. Holmlund, Ph.D. Wisconsin; K.D. Levy, Ph.D. Kentucky; C. J. Mellor, Ph.D. Chicago; O. Rivera-Rodas, Ph.D. California (Davis); J.B. Romeiser, Ph.D. Vanderbilt; D.J. Young, Ph.D. Texas

**Associate Professors**

M. Beauvois, Ph.D. Texas; S. Blackwell, Ph.D. Indiana; F. Brizio-Skov, Ph.D. Washington; L. Essif Ph.D. Brown; P. Hoeung, Ph.D. Wisconsin; G. Kaplan, Ph.D. Pennsylvania; J. LaCure, Ph.D. Indiana; D. Lee, Ph.D. Stanford; M. McAlpin, Ph.D. Columbia; S. Ohnesorg, Ph.D. McGill; N. Pervukhina, Ph.D. Bryn Mawr; E. Silva-Filho, Ph.D. North Carolina

**Assistant Professors**

M.N. Arnold, Ph.D. Texas; A. Ayo, Ph.D. Arizona; O. Berwald, Ph.D. North Carolina; L. Cano, Ph.D. Pennsylvania State; N. Cruz-Camara, Ph.D. SUNY (Buffalo); M. Gimmel, Ph.D. Indiana; A. Gregory, Ph.D. D. Texas; E. Johnson, Ph.D. Tennessee; N. Horiguchi, Ph.D. Pennsylvania; J. Williams, Ph.D. Ohio State
The Honors concentration consists of at least 32 hours of German in courses numbered above 300, including completion of German 477 or 478 with a grade of A or B+. To be admitted to the Honors Program, students must present a cumulative grade point average in German major courses of at least 3.5 and have an overall GPA of not less than 3.2. Students should apply for admission to the Bachelor of Arts Honors Program at the end of their junior year. Application forms are available in the department office. Since courses taken abroad are not calculated in the overall average, the department reserves the right to make a judgment on the appropriateness of a study-abroad curriculum for acceptance as honors work and to require other 400-level courses as a condition for the degree.

**Language and World Business Concentration**

For further information, see the following page.

**ITALIAN MAJOR**

The Italian major consists of 30 hours in courses numbered 311 and above.

**Language and World Business Concentration**

For further information, see the following page.

**RUSSIAN MAJOR**

The Russian major has two options—Literary Emphasis and Area Studies. Russian 201-202 is a prerequisite for both. Majors should prepare their programs in consultation with the departmental faculty advisor. Both options consist of 30 hours of courses and both require Russian 311-312 and 401-402.

**Literary Emphasis Option**

Literary Emphasis also requires Russian 301-302, 451-452, and 6 hours from Russian 221, 222, 371, 372, or other courses numbered above 300.

**Area Studies Option**

Additional requirements for the Area Studies Option are Russian 371-372; 3 or more credits chosen from Russian 221, 222, and Russian courses numbered 300 and above; and 6 or more credits chosen from Geography 375, History 340-341, and Political Science 459.

**Language and World Business Concentration**

For further information, see the following page.

**SPANISH MAJOR**

The Spanish major consists of 30 hours in courses numbered above 300 in one of two concentrations. All majors must have the following courses: 323, 330 and 331.

**Literature Concentration**

322, 333, 334; four additional 400-level courses, at least two of which must be in literature.

**Hispanic Studies Concentration**

One course from 332, 333 or 334; 6 additional courses in language, literature or culture, at least 4 of which must be from the 400 level. Students whose level of proficiency in Spanish is superior as defined by the ACTFL Proficiency Guidelines may substitute a 400-level course for 323 with consent of the department.
Language and World Business Concentration
For further information, see below.

FRENCH, GERMAN, ITALIAN, RUSSIAN, SPANISH MAJOR
Concentration in Language and World Business or
INTERDISCIPLINARY PROGRAMS MAJOR
Concentration in Language and World Business—Chinese, Japanese, or Portuguese

Students who wish to prepare for careers in international business may complete (a) a special major in Chinese, French, German, Italian, Japanese, Portuguese, Russian, or Spanish; (b) a professional emphasis in International Business, International Retail Merchandising, or International Agricultural Economics, and (c) some form of practical experience related to the concentration. Admission is by permission of the program director.

A. Language Requirements
• The Chinese concentration consists of 30 hours. The following are required: Chinese 231, 232, 331, 332, three hours of Asian Languages 490 or 491, and 9 hours of courses from the following: Asian Studies 102, History 362, 363, 364, 476, Political Science 454, Religious Studies/Philosophy 376, 379 (or other course approved by the Asian Studies Advisor).
• The French major consists of 33 hours. The following are required: French 333, 345, 351, 352, 400, 422, 432, 440, 445, a 400 level literature elective, and three hours of 491, 490 or 493.
• The German major consists of 30 hours. The following are required: German 301-302, 311-312, 323 or 363, 485, three credit hours of 490, 491 or 493, and three courses numbered 320 or above.
• The Italian major consists of 30 hours. The following are required: Italian 314, 341, 342, 401, 490 or 491, and 12 hours of any 400-level literature courses.
• The Japanese concentration consists of 30 hours. The following are required: Japanese 251, 252, 351, 352, three hours of Asian Languages 490 or 491, and 9 hours of courses from the following: Asian Studies 102 or 471 (if related to Japan), History 365, Japanese 313 or 314, Religious Studies 383.
• The Portuguese concentration consists of 30 hours. The following are required: Portuguese 301-302, 309, 315-316, 409, 431 or 432, and nine hours of courses from the following: Portuguese 490, 491, 493, Latin American Studies 360, 361, 401, 460, 463, 465.
• The Russian major consists of 30 hours. The following are required: Russian 301-302, 311-312, 401-402, 451-452, 490 or 491, and 3 hours from the following: 221, 222, 371, 372, 430, or any 400-level courses.
• The Spanish major consists of 33 hours. The following are required: 323, 330, 331, 345, 346, at least one 300-level literature survey course, three hours of 490 or 491, and any four courses in language, literature or culture, at least two of which must be from the 400 level while the remaining two may be selected from courses numbered above 300. Students whose level of proficiency in Spanish is superior as defined by the ACTFL Proficiency Guidelines may substitute a 400-level course for 323 with consent of the department.

B. Professional Emphasis
• International Business students will complete the 25 hour Business minor, which includes the following courses: Accounting 201-202, Business Administration 201, Economics 201, Statistics 201, Finance 301, Marketing 300, and Management 300. All upper-division (300 level or above) coursework must be taken at The University of Tennessee. Students are responsible for meeting all prerequisites for business courses. [For instance, Mathematics 125 or 141 is a prerequisite to Statistics 201, and Business Administration 101 is a prerequisite to Business Administration 201.] Students should consult their catalogs and advisors to insure that all prerequisites are met.
• International Retail Merchandising students will take 23 hours. The following are required: Accounting 201, 202, Marketing 300, Retail and Consumer Sciences 210, 310, 421, and three additional credit hours from the following: Retail and Consumer Sciences 350, 410, 411, 412, 415, 493. Students are responsible for meeting all prerequisites for business courses. Students should consult their catalogs and advisors to insure that all prerequisites are met.
• International Agricultural Economics students will complete 24 hours. The following are required: Accounting 201, Agricultural Economics 210, 320, 342, 350, 420, 430, and three credit hours from the following: Marketing 300, Management 300, Finance 301. Students are responsible for meeting all prerequisites for business courses. Students should consult their catalogs and advisors to insure that all prerequisites are met.

C. Practical Experience
Each Language and World Business student must undertake an internship (490), study abroad (491), or a relevant research project (493) for a minimum of 3 hours (included in major requirements).

Additionally, Language and World Business students must consult an advisor in the Department in selecting relevant courses under the Basic Skills and Distribution requirements for the College.

Students interested in the Language and World Business Program should contact the Director for advising as early as possible in their college careers. The academic record presented will be assessed by the Director of Language and World Business. Minimum requirements for progression to the concentration are a 2.75 cumulative average in the courses specifically required by the College of Arts and Sciences in Basic Skills and Distribution and in the Language and World Business plan of studies, and a 3.0 average in language courses. Asian Languages, French, German, Italian, Portuguese, Russian, or Spanish 199 is a prerequisite for the program. Progression is based on availability of space. Program standards are adjusted periodically, and current requirements are available from the Director of the Language and World Business Program.

For further information, inquire at 701 McClung Tower.
Minors

The Chinese minor consists of Asian Languages 231-232 or its equivalent and is a prerequisite to the minor. The minor shall consist of at least 17 hours of Chinese courses, including Asian Languages 331-332; 431; and six hours from Asian Languages 311-312 or other Chinese courses above 300.

The French minor consists of 18 hours in courses numbered 333 and above, distributed as follows: 333 or 334; 351-352; 421; plus six hours of electives at the 300 or 400 level. French 300 does not count toward the minor, but is recommended for students needing grammar review.

The German minor consists of German 201-202 or its equivalent and as a prerequisite to the minor. The minor shall consist of at least 18 hours of German courses numbered above 300, which normally include German 301-302 and 12 additional hours of courses numbered above 300 (excluding 331-332 and courses in English translation).

The Italian minor consists of 18 hours in courses numbered 311 or above. Students pursuing a minor must consult with a departmental advisor.

The Japanese minor consists of Asian Languages 251-252 or its equivalent and is a prerequisite to the minor. The minor shall consist of at least 17 hours of Japanese courses, including Asian Languages 351-352; 451; and 6 hours from Asian Languages 313-314 or other Japanese courses above 300.

The Portuguese minor consists of 18 hours in courses numbered 300 or above. Students pursuing a minor must consult with a departmental advisor.

The Russian minor Russian 201-202 is a prerequisite to the minor. The minor in Russian shall consist of at least 18 hours of Russian courses, including Russian 301-302; 311-312; and 6 hours from Russian 221-222 or other Russian courses numbered above 300.

The Spanish minor consists of 18 hours in courses numbered above 300, distributed as follows: 323, 330 and 331; one course from 332, 333 or 334; two additional courses. Students pursuing a minor are strongly advised to consult with a departmental advisor.

The French minor consists of 18 hours in courses numbered 333 and above, distributed as follows: 333 or 334; 351-352; 421; plus six hours of electives at the 300 or 400 level. French 300 does not count toward the minor, but is recommended for students needing grammar review.

The German minor consists of German 201-202 or its equivalent and as a prerequisite to the minor. The minor shall consist of at least 18 hours of German courses numbered above 300, which normally include German 301-302 and 12 additional hours of courses numbered above 300 (excluding 331-332 and courses in English translation).

The Italian minor consists of 18 hours in courses numbered 311 or above. Students pursuing a minor must consult with a departmental advisor.

The Japanese minor consists of Asian Languages 251-252 or its equivalent and is a prerequisite to the minor. The minor shall consist of at least 17 hours of Japanese courses, including Asian Languages 351-352; 451; and 6 hours from Asian Languages 313-314 or other Japanese courses above 300.

The Portuguese minor consists of 18 hours in courses numbered 300 or above. Students pursuing a minor must consult with a departmental advisor.

The Russian minor Russian 201-202 is a prerequisite to the minor. The minor in Russian shall consist of at least 18 hours of Russian courses, including Russian 301-302; 311-312; and 6 hours from Russian 221-222 or other Russian courses numbered above 300.

The Spanish minor consists of 18 hours in courses numbered above 300, distributed as follows: 323, 330 and 331; one course from 332, 333 or 334; two additional courses. Students pursuing a minor are strongly advised to consult with a departmental advisor.
Ensembles

Ensemble participation during each semester of residence is required of all students studying applied music. Students are required to participate in ensembles appropriate to their specific degree program as approved by the faculty of the department. Ensemble requirements vary among the concentrations and are listed in the School of Music Undergraduate Handbook, which is available in Room 211, Music Building. Enrollment in all ensembles is by audition or consent of instructor.

Applied Music

Applied study is classified as Principal or Secondary. Students studying their principal (major) instrument register for credit appropriate to their program, 2-4 credit hours; students studying a secondary instrument register for 1 hour of credit. Study at the principal level receives one hour of private instruction per week or a one-hour class lesson plus a half-hour private lesson. Determination of the mode of instruction rests with the department. Study at the secondary level receives one-half hour instruction per week or its equivalent in class instruction. Applied music courses do not permit non-credit registration nor may students elect non-conventional grading.

Area study guides for all sections of the examination are available in the Music Office.

All music majors are required to register for Music General 200—Solo Class every fall and spring semester with the exception of the semester in which they are student teaching. The requirements for this course are to attend scheduled concerts, recitals, master classes, repertoire, and solo classes, and to perform at least once each semester as partial fulfillment of applied music credit requirements.

Applied Music Fees: $80 per semester for half-hour lesson (1 credit hour); $160 per semester for hour lesson (2-4 credit hours). Computer registration and applied music fee payment must be verified in the School of Music office no later than the end of the second day of classes of the fall, and spring semesters and the first day of the summer terms in order to be accepted for applied music study. Applied music fees are not refundable after lessons have been scheduled.

Keyboard Skills Proficiency Examination

Proficiency in keyboard skills is required of all music majors and is usually acquired in the four-semester series of Class Piano I, II, III, IV (Mus Kbd 110, 120, 210, 220). Students who already possess keyboard skills may pass a proficiency examination in lieu of these courses.

Recital Attendance Policy

The faculty of the School of Music believes that exposure to a variety of live musical performances is an important part of the education of students studying music at the University level. As a result, the faculty has put in place a recital attendance requirement for undergraduate music students. Regular recital attendance helps students become acquainted with accepted norms of recital presentation, furnishes them with opportunities to get to know and respect the talents of other students and faculty in the School of Music, and helps them establish the habit of attending musical performances after graduation. Specific recital attendance requirements are listed in the School of Music Undergraduate Student Handbook.

BACHELOR OF MUSIC DEGREE

The School of Music offers curricula leading to the Bachelor of Music degree with concentrations in music theory/composition, music education, and applied music (voice; piano; organ; sacred music-organ or piano; sacred music-voice; piano pedagogy; strings; woodwind, brass, and percussion instruments; studio music and jazz). This study prepares students for graduate music study or for positions in music for which a professional music degree is required.

The General Education (6 hours foreign language requirement) is in addition to the University admission requirement. Students may continue at the 200 level in a language begun in high school or elect to begin a new language at the 100 level. Students majoring in vocal performance must complete one year each of two languages chosen from French, German and Italian.

Music Education Concentration

Students seeking licensure to teach music in the public schools should pursue one of the options within this degree program. Four-year and five-year options are available to prepare teachers for instrumental teaching or for the teaching of vocal and general music. The four-year program leads to the degree and to teaching licensure. The five-year program provides for the granting of the degree at the end of four years, with teacher licensure being awarded after a fifth-year, graduate level internship. Students choosing the five-year program earn twenty-four hours which may be applied to the Master’s degree.

Requirements for the Bachelor of Music • Music Major • Music Education Concentration—Wind/Percussion Emphasis (5-year option)

<table>
<thead>
<tr>
<th>Hours</th>
<th>Credit</th>
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<tbody>
<tr>
<td>Freshman</td>
<td></td>
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<tr>
<td>English 101, 102</td>
<td>6</td>
</tr>
<tr>
<td>Music Theory 110, 120</td>
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<tr>
<td>Music Theory 130, 140</td>
<td>2</td>
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<tr>
<td>Music Performance</td>
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<tr>
<td>Music General 200</td>
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<tr>
<td>Music Education 230</td>
<td>1</td>
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<tr>
<td>Music History 200</td>
<td>3</td>
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<tr>
<td>Music Keyboard 110, 120</td>
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</tr>
<tr>
<td>Foreign Language</td>
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<td>Sophomore Year</td>
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<tr>
<td>Music Theory 210, 220</td>
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<td>Music Theory 230, 240</td>
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<tr>
<td>Music General 200</td>
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<tr>
<td>Music History 210, 220</td>
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</tr>
<tr>
<td>Music Education 210, 211</td>
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<tr>
<td>Music Education 220, 221</td>
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<tr>
<td>Music Ensemble</td>
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<tr>
<td>Educational Psychology 210</td>
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<tr>
<td>Social Science</td>
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<tr>
<td>Math 115</td>
<td>3</td>
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<tr>
<td>Junior Year</td>
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<tr>
<td>Music Theory 310</td>
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<td>Music Education 350</td>
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<td>Music History 380</td>
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</table>
Music Ensemble ........................................... 1,1
Music Education 200 .......................................... 1
Music Education 310, 320 ...................................... 5
Music Education 212 ........................................... 1
Music Education 420, 430 ...................................... 6
Music Ensemble ................................................ 3
Music History 380 ................................................ 3
Non-U.S. History ............................................... 3

***Senior Year***

Music Performance ........................................... 2,2
Music General 200 ............................................. 0,0
Music General 301 .............................................. 0
Music General 574 .............................................. 2
Music General 591 .............................................. 4
Music Electives .................................................. 6

Total 125 plus 24 graduate

***Internship Year***

Music Education 575 ........................................... 12
Music Education 574 ........................................... 2
Music Electives .................................................. 6

Total 133

**Requirements for the Bachelor of Music Degree**

**Music Major**

**Music Education Concentration—String Emphasis (5-year option)**

**Freshman**

- English 101, 102 ........................................... 6
- Music Theory 110, 120 ..................................... 6
- Music Theory 130, 140 ..................................... 6
- Music Performance ....................................... 2,2
- Music Ensemble ........................................... 1,1
- Music General 200 ........................................ 0,0
- Music Education 240 or 241 ........................... 1
- Music History 200 ......................................... 3
- Music Keyboard 110, 120 ................................. 1,1
- Foreign Language ........................................... 6
- Social Science ............................................... 3

**Sophomore**

- Music Theory 210, 220 ..................................... 6
- Music Theory 230, 240 ..................................... 2
- Music Performance ....................................... 2,2
- Music General 200 ........................................ 0,0
- Music History 210, 220 .................................... 6
- Music Education 210, 211 ............................... 2
- Music Education 220, 221 ............................... 2
- Music Ensemble ........................................... 1,1
- Educational Psychology 210 ......................... 3
- Math 115 ..................................................... 3
- Non-US History ............................................. 3

**Junior**

- Music Theory 310 ........................................... 3
- Music Theory 320 ........................................... 2
- Music Performance ....................................... 2,2
- Music General 200 ........................................ 0,0
- Music Education 350 ...................................... 2
- Music History 380 ........................................... 3
- Music Ensemble ........................................... 1,1
- Music Education 200 ...................................... 1

**Senior**

- Music Performance ....................................... 2,2
- Music General 200 ........................................ 0,0
- Music General 301 ........................................ 0
- Music Ensemble ........................................... 1,1
- Music Education 212 ..................................... 1
- Music Education 420, 430 ................................ 6
- Music Ensemble ........................................... 3
- Music History 380 ........................................... 3
- Non-U.S. History ........................................... 3

**Total**

133
### Requirements for the Bachelor of Music • Music Major • Music Education Concentration—String Emphasis (4-year alternative)

#### Freshman

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Credit</th>
</tr>
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<tbody>
<tr>
<td><strong>English</strong></td>
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<td>6</td>
</tr>
<tr>
<td>101, 102</td>
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</tr>
<tr>
<td><strong>Music Theory</strong></td>
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<tr>
<td>110, 120</td>
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<tr>
<td><strong>Music Theory</strong></td>
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<td>130, 140</td>
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<tr>
<td><strong>Music Performance</strong></td>
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<tr>
<td><strong>Music Ensemble</strong></td>
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<td>6</td>
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<tr>
<td><strong>Music General</strong></td>
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<tr>
<td>200</td>
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<td>6</td>
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<tr>
<td><strong>Music History</strong></td>
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<tr>
<td>210</td>
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<tr>
<td><strong>Music History</strong></td>
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#### Total

125 plus 24 graduate
**Requirements for the Bachelor of Music • Music Major • Music Education—Vocal/General Concentration/Vocal Emphasis (5-year option)**

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*Optional Full Recital with approval of major area

**Requirements for the Bachelor of Music • Music Major • Music Education—Vocal/General Concentration/Vocal Emphasis (4-year alternative)**

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<tr>
<td>English 101,102</td>
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<td>Music Theory 130,140</td>
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<td>128 plus 24 graduate</td>
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*Optional Full Recital with approval of major area
### Requirements for the Bachelor of Music • Music Major • Emphasis (4-year alternative)

#### Freshman

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<tbody>
<tr>
<td>English 101, 102</td>
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#### Sophomore

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<td>Mathematics 115</td>
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<td>Music Performance (voice)</td>
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<td>Music Education 420</td>
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<td>Music Theory 450</td>
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*Optional Full Recital with approval of major area

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### Requirements for the Bachelor of Music • Music Major • Organ Concentration

#### Freshman

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<tr>
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<td>Music Performance (voice)</td>
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<td>4, 4</td>
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#### Sophomore

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<td>Music Theory 230, 240</td>
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<tr>
<td>Music History 210, 220</td>
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<td>6</td>
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<td>Music Performance 290</td>
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#### Junior

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<td>Music General 301</td>
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#### Senior

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<th>Course</th>
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<tbody>
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<td>Music General 401</td>
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<td>Music Keyboard 460, 470</td>
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### Requirements for the Bachelor of Music • Music Major • Piano Concentration

#### Freshman

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<th>Course</th>
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<td>Music Performance 180</td>
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<td>Music General 200</td>
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<td>Foreign Language</td>
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<tr>
<td><strong>Total</strong></td>
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*Organ majors take Class Voice (Music Vocal 110-120) and/or Voice (Music Performance 155).
### Sophomore
- **Music Theory 210,220** ................................................. 6
- **Music Theory 230,240** ................................................... 2
- **Music Performance 280** ............................................. 4,4
- **Music General 200** ..................................................... 0,0
- **Music History 210,220** .............................................. 6
- **Music Ensemble 399** .................................................. 1,1
- **Natural Science** ......................................................... 6
- **Music Electives** ......................................................... 3

### Junior
- **Music History 380** .................................................... 3
- **Music Keyboard 420,430** ........................................... 6
- **Music Theory 310** ....................................................... 3
- **Music Performance 380** ........................................... 4,4
- **Music General 200** ................................................... 0,0
- **Music General 301** .................................................... 0
- **Music Ensemble 399** ................................................ 1,1
- **Music Education 310** ............................................... 3
- **Social Science** .......................................................... 6
- **Electives** ................................................................. 5

### Senior
- **Music Keyboard 230** ................................................ 1
- **Music Keyboard 340** ................................................ 3
- **Music Performance 480** ........................................... 4,4
- **Music General 200** ................................................... 0
- **Music General 401** .................................................... 0
- **Music Ensemble 399** ................................................ 1,1
- **Non-US History** ....................................................... 6
- **Electives** ................................................................. 10

#### Total 130

### Requirements for the Bachelor of Music • Music Major • Piano Pedagogy Concentration

#### Freshman
- **English 101,102** ....................................................... 6
- **Music Theory 110,120** .............................................. 6
- **Music Theory 130,140** .............................................. 2
- **Music Performance 180** ........................................... 3,5
- **Music Ensemble** ...................................................... 1,1
- **Music General 200** .................................................. 0,0
- **Music History 200** ................................................... 3
- **Foreign Language** .................................................... 6
- **Electives** ................................................................. 3

#### Sophomore
- **Music Theory 210,220** .............................................. 6
- **Music Theory 230,240** .............................................. 2
- **Music Performance 280** ........................................... 3,5
- **Music General 200** .................................................. 0,0
- **Music History 210,220** ........................................... 6
- **Music Ensemble 399** .............................................. 1,1
- **Natural Science** ....................................................... 6
- **Music Keyboard 340,350** ........................................... 6

#### Junior
- **Music History 380** .................................................... 3
- **Psychology 110** ....................................................... 3
- **Social Science** ........................................................ 3
- **Music Keyboard 360,370** ........................................... 6
- **Music Theory 310** .................................................... 3
- **Music Performance 380** ........................................... 3,5
- **Music Keyboard 480** ................................................ 3
- **Music General 200** .................................................. 0,0
- **Music General 301** .................................................. 0
- **Music Ensemble 399** ................................................ 1,1
- **Music Education 310** .............................................. 3
- **Electives** ................................................................. 3

#### Total 132

### Requirements for the Bachelor of Music • Music Major • Sacred Music Concentration • Organ Track

#### Freshman
- **English 101,102** ....................................................... 6
- **Music Theory 110,120** .............................................. 6
- **Music Theory 130,140** .............................................. 2
- **Music Performance 190 (organ)** ................................. 3,3
- **Music Vocal 110 (voice)** ........................................... 1,1
- **Music Ensemble** ...................................................... 1,1
- **Music General 200** ................................................... 0,0
- **Music History 210,220** ........................................... 6
- **Music Education 220** .............................................. 1

#### Sophomore
- **Music Theory 210,220** .............................................. 6
- **Music Theory 230,240** .............................................. 2
- **Music Performance 290 (organ)** ................................ 3,3
- **Music General 200** ................................................... 0,0
- **Music History 210,220** ........................................... 6
- **Music Ensemble** ...................................................... 1,1
- **Music Performance 155 (voice)** ................................ 1,1
- **Non-US History** ....................................................... 6
- **Music Education 310,320** ........................................... 3,2
- **Music Keyboard 230** ................................................ 1
- **Music Keyboard 240** ................................................ 1
- **Religious Studies** .................................................... 3
- **Social Science** ........................................................ 6

#### Senior
- **Music Keyboard 310,320** .......................................... 1,1
- **Music Keyboard 460,470** ......................................... 3,3
- **Music Performance 490** ........................................... 3,3
- **Music General 200** ................................................... 0,0
- **Music General 401** ................................................... 0
- **Music Ensemble** ...................................................... 1,1
- **Music General 495** ................................................... 3
- **Natural Science** ....................................................... 6
- **Electives** ................................................................. 8

#### Total 132

### Requirements for the Bachelor of Music • Music Major • Sacred Music Concentration • Piano Track

**Freshman**

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<tr>
<td>English 101, 102</td>
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<td>Music Theory 130, 140</td>
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**Sophomore**

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<tr>
<td>Music Performance 280 (piano)</td>
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<td>Music Performance 290 (organ)</td>
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**Junior**

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<td>Music Education 310, 320</td>
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<td>Religious Studies</td>
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**Senior**

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<tbody>
<tr>
<td>Music Keyboard 310, 320</td>
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<td>Music Performance 480 (piano)</td>
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<td>Music Education 310, 320</td>
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<td>Electives</td>
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**Total** 132

1 Piano majors take 4 hours of accompanying and 4 hours of choir.
2 Piano majors take Class Voice (Music Voice 110, 120) 1.1 and/or Voice (Music Performance 155) 1.1.
3 To be chosen from Religious Studies 101, 102, 232, 305, 311, 322, 326, 351, 352, 355, 370, 425, 430.

### Requirements for the Bachelor of Music • Music Major • Sacred Music Concentration • Strings Concentration

**Freshman**

<table>
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<tr>
<th>Course</th>
<th>Hours Credit</th>
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<tbody>
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<td>Music Performance 155 (voice)</td>
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<td>Music Performance</td>
<td>1,1</td>
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<tr>
<td>Music Ensemble</td>
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</tr>
<tr>
<td>Music General 200</td>
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<tr>
<td>Music History 200</td>
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<tr>
<td>Foreign Language</td>
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**Sophomore**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
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<tbody>
<tr>
<td>Music Theory 210, 220</td>
<td>6</td>
</tr>
<tr>
<td>Music Theory 230, 240</td>
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</tr>
<tr>
<td>Music Performance 255</td>
<td>3,3</td>
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<tr>
<td>Music General 200</td>
<td>0,0</td>
</tr>
<tr>
<td>Music History 210, 220</td>
<td>6</td>
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<tr>
<td>Music Ensemble</td>
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</tr>
<tr>
<td>Music Performance</td>
<td>1,1</td>
</tr>
<tr>
<td>Natural Science</td>
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<tr>
<td>Music Vocal 425</td>
<td>3</td>
</tr>
<tr>
<td>Music Education 200</td>
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**Junior**

<table>
<thead>
<tr>
<th>Course</th>
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</thead>
<tbody>
<tr>
<td>Social Science</td>
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<tr>
<td>Music History 380</td>
<td>3</td>
</tr>
<tr>
<td>Music History 480</td>
<td>3</td>
</tr>
<tr>
<td>Music Theory 310</td>
<td>3</td>
</tr>
<tr>
<td>Music Performance 355</td>
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</tr>
<tr>
<td>Music Performance</td>
<td>1,1</td>
</tr>
<tr>
<td>Music General 301</td>
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</tr>
<tr>
<td>Music Ensemble</td>
<td>1,1</td>
</tr>
<tr>
<td>Music General 401</td>
<td>0</td>
</tr>
<tr>
<td>Music Education 310, 320</td>
<td>3</td>
</tr>
<tr>
<td>Non-U.S. History</td>
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</tr>
<tr>
<td>Electives</td>
<td>8</td>
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</tbody>
</table>

**Total** 132

1 Class Piano (Music Keyboard 110-120, 210-220) or Organ (Music Performance 190).
2 Piano (Music Performance 180) or Organ (Music Performance 190).
3 To be chosen from Religious Studies 101, 102, 232, 305, 311, 321, 322, 326, 351, 352, 355, 370, 425, 430.

### Requirements for the Bachelor of Music • Music Major • Sacred Music Concentration • Voice Track

**Freshman**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>English 101, 102</td>
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</tr>
<tr>
<td>Music History 110, 120</td>
<td>6</td>
</tr>
<tr>
<td>Music Theory 130, 140</td>
<td>2</td>
</tr>
<tr>
<td>Music Performance 155 (voice)</td>
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</tr>
<tr>
<td>Music Performance</td>
<td>1,1</td>
</tr>
<tr>
<td>Music Ensemble</td>
<td>1,1</td>
</tr>
<tr>
<td>Music General 200</td>
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<tr>
<td>Music History 200</td>
<td>3</td>
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<tr>
<td>Foreign Language</td>
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**Sophomore**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
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<tbody>
<tr>
<td>Music Theory 210, 220</td>
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</tr>
<tr>
<td>Music Theory 230, 240</td>
<td>2</td>
</tr>
<tr>
<td>Music Performance 255</td>
<td>3,3</td>
</tr>
<tr>
<td>Music General 200</td>
<td>0,0</td>
</tr>
<tr>
<td>Music History 210, 220</td>
<td>6</td>
</tr>
<tr>
<td>Music Ensemble</td>
<td>1,1</td>
</tr>
<tr>
<td>Natural Science</td>
<td>6</td>
</tr>
<tr>
<td>Music Vocal 425</td>
<td>3</td>
</tr>
<tr>
<td>Music Education 200</td>
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**Junior**

<table>
<thead>
<tr>
<th>Course</th>
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</thead>
<tbody>
<tr>
<td>Music History 380</td>
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<td>Music Theory 310</td>
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<td>Music Ensemble</td>
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<tr>
<td>Music General 401</td>
<td>0</td>
</tr>
<tr>
<td>Music Education 310, 320</td>
<td>3</td>
</tr>
<tr>
<td>Electives</td>
<td>6</td>
</tr>
</tbody>
</table>

**Total** 132

1 Piano majors take 4 hours of accompanying and 4 hours of choir.
2 Piano majors take Class Voice (Music Voice 110, 120) 1.1 and/or Voice (Music Performance 155) 1.1.


Requirements for the Bachelor of Music • Music Major • Theory/Composition Concentration

Freshman

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
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</thead>
<tbody>
<tr>
<td>English 101, 102</td>
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<td>Music Theory 110, 120</td>
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<td>Music Theory 130, 140</td>
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<tr>
<td>Music History 200</td>
<td>3</td>
</tr>
<tr>
<td>Music Jazz 350</td>
<td>3</td>
</tr>
<tr>
<td>Music Jazz 110</td>
<td>2</td>
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<tr>
<td>Music Jazz 130, 140</td>
<td>1.1</td>
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<tr>
<td>Music Performance (100 level)</td>
<td>3.5</td>
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<tr>
<td>Music Theory 110, 120</td>
<td>3</td>
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<tr>
<td>Music Theory 130, 140</td>
<td>6</td>
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<tr>
<td>Music Theory 210, 220</td>
<td>6</td>
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<tr>
<td>Music Performance (200 level)</td>
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<tr>
<td>Music Theory 380</td>
<td>5</td>
</tr>
<tr>
<td>Music Performance (300 level)</td>
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<tr>
<td>Music Ensemble</td>
<td>1.1</td>
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<tr>
<td>Music General 200</td>
<td>0</td>
</tr>
<tr>
<td>Social Science</td>
<td>3</td>
</tr>
<tr>
<td>Music Technology 340</td>
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Sophomore

<table>
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<tbody>
<tr>
<td>Music Theory 210, 220</td>
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<tr>
<td>Music Theory 230, 240</td>
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</tr>
<tr>
<td>Music Theory 210, 220</td>
<td>3.3</td>
</tr>
<tr>
<td>Music Jazz 110</td>
<td>2</td>
</tr>
<tr>
<td>Music Jazz 210, 220</td>
<td>2.2</td>
</tr>
<tr>
<td>Music Performance (200 level)</td>
<td>3.3</td>
</tr>
<tr>
<td>Music Ensemble</td>
<td>1.1</td>
</tr>
<tr>
<td>Music General 200</td>
<td>0</td>
</tr>
<tr>
<td>Social Science</td>
<td>3</td>
</tr>
<tr>
<td>Music Technology 340</td>
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Junior

<table>
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<th>Course</th>
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<tbody>
<tr>
<td>Music Theory 310</td>
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<td>Music Theory 320</td>
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</tr>
<tr>
<td>Music Jazz 310</td>
<td>2</td>
</tr>
<tr>
<td>Music Jazz 320</td>
<td>2</td>
</tr>
<tr>
<td>Music History 380</td>
<td>5</td>
</tr>
<tr>
<td>Music Performance (400 level)</td>
<td>3.3</td>
</tr>
<tr>
<td>Music Ensemble</td>
<td>3.3</td>
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<td>Music General 200</td>
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<tr>
<td>Music General 301</td>
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<tr>
<td>Natural Science</td>
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<tr>
<td>Foreign Language</td>
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Senior

<table>
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<tr>
<th>Course</th>
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</thead>
<tbody>
<tr>
<td>Music Jazz 410</td>
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</tr>
<tr>
<td>Music Jazz 420</td>
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<tr>
<td>Music Performance (400 level)</td>
<td>3.3</td>
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<tr>
<td>Music Ensemble</td>
<td>1.1</td>
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<tr>
<td>Music General 200</td>
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<td>Music General 401</td>
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<td>Social Science Elective</td>
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<tr>
<td>Non-US History</td>
<td>6</td>
</tr>
<tr>
<td>Electives</td>
<td>12</td>
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</tbody>
</table>

Total 132

1Areas of Study:

2Arts and Sciences Electives: Humanities—Arts (Non-Music), Literature, Philosophical Perspectives, Interdisciplinary Studies

Requirements for the Bachelor of Music • Music Major • Voice Concentration

Freshman

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>English 101, 102</td>
<td>6</td>
</tr>
<tr>
<td>Music Theory 110, 120</td>
<td>6</td>
</tr>
<tr>
<td>Music Theory 130, 140</td>
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<td>Music History 200</td>
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<td>Music General 200</td>
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<td>Music General 401</td>
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</tr>
<tr>
<td>Social Science Elective</td>
<td>3</td>
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<tr>
<td>Non-US History</td>
<td>6</td>
</tr>
<tr>
<td>Electives</td>
<td>12</td>
</tr>
</tbody>
</table>

Total 131

1Foreign Language: 6
The School of Music offers curricula leading to the Bachelor of Arts degree with a major and minor in Music designed for those students who have a strong interest in music but desire a comprehensive liberal studies program.

**Music Course Requirements**

- **Prerequisites:** Music Theory 110, 120 (6); Music Theory 130, 140 (2); Music Performance 100 Level (2).
- **Courses toward the major:** Music Theory 210, 220 (6); Music Theory 230, 240 (2); Music History 200 (3); Music History 210, 220 (6); Music Performance 200 level or above (four semester minimum) (8); Music General 200 (4 semester minimum) (0); Music Ensemble (4); Music Theory 310 (3) 3 hours selected from: Music History 350, 380, 390. Music electives (0-3 hours) selected from: Music History 460 (3); Music General 301 (0); Music Theory 493 (3) or Music History 493 (3); Music General 411 (0). Total of 45-48 hours.
- Students must complete a minimum of four semesters of Music Performance, major instrument/voice at the 200 level or above.
- Music General 200 must be completed a minimum of four semesters.

Degree requires a minimum of 124 hours. Remainder of hours to be structured per requirements as outlined in the catalog section Requirements for Degrees in the general section of the College of Arts and Sciences catalog entry.

**Minor in Music**

- Minor concentration in Applied Music consists of 17 hours in courses numbered 200 and above, distributed as follows: Music History 200, 8 hours in applied music, and 6 hours in music electives. Prerequisites are Music Theory 100 or equivalent and two semesters of applied music study (Music Performance) at the 103-190 levels.
- Minor concentration in Music History and Literature consists of 17 hours in courses numbered 200 and above, distributed as follows: Music History 200, 9 hours in Music History and Literature courses, and 5 hours in music electives. Prerequisites are Music Theory 100 or equivalent and two semesters of applied music study at the 103-190 levels.
PHILOSOPHY MAJOR

• Prerequisites—3 hours of logic, normally 130 or 135.
• Requirements—24 hours of courses numbered 200 or above, including three hours of ethics, normally 240 or 440, and six hours in the history of philosophy, three in ancient, normally 320, and three in modern, normally 324. Majors are required to discuss their programs with a member of the Philosophy faculty.

Minor in Philosophy

The minor consists of 18 hours in courses 200 or above. Minors should discuss their program with a member of the Philosophy faculty.

PHYSICS AND ASTRONOMY

http://www.phys.utk.edu/

Professors
S.P. Sorensen (Head), Ph.D. Copenhagen (Denmark); F.E. Barnes (Collaborating Scientist), Ph.D. California; C.R. Bingham, Ph.D. Tennessee; W.E. Blass, Ph.D. Michigan State; M.J. Breinig, Ph.D. Oregon; T.A. Callcott, Ph.D. Purdue; R.W. Childers, Ph.D. Vanderbilt; H.W. Crater (UTSI), Ph.D. Yale; K.E. Duckett, Ph.D. Tennessee; A.G. Eguiluz, Ph.D. Brown; S.B. Elston, Ph.D. University of Massachusetts; S. Georgiou, Ph.D. Manchester (England); G.L. Green, Ph.D. Harvard; M.W. Guidry, Ph.D. Tennessee; T. Handler, Ph.D. Rutgers; I. Kamynchikov, Ph.D. ITEP (Russia); J.W.L. Lewis (Distinguished Professor, UTSI), Ph.D. Mississippi, Ph.D. Michigan; J. Macek (Distinguished Scientist), Ph.D. Rensselaer Polytechnic Institute; W. Nazarewicz, Ph.D. Warsaw; L.R. Painter, Ph.D. Tennessee; D.J. Pegg, Ph.D. New Hampshire; E.W. Plummer (Distinguished Scientist), Ph.D. Cornell; J.J. Quinn (Lincoln Chair), Ph.D. Maryland; L.L. Riedinger, Ph.D. Vanderbilt; C.C. Shih, Cornell; J.R. Thompson, Ph.D. Duke; B.F.L. Ward, Ph.D. Princeton; H.H. Weitering, Ph.D. Groningen

Associate Professors
P. Dai, Ph.D. Missouri; L. Davis (UTSI), Ph.D. Auckand; Y.Y. Efremenko, Ph.D. ITEP (Russia); J.C. Levin, Ph.D. Oregon; D.G. Mandrus, Ph.D. SUNY (Stony Brook); C. Parigger (UTSI), Ph.D. New Zealand; K.F. Read (Collaborating Scientist), Ph.D. Cornell; S.Y. Shieh, Ph.D. Maryland; G. Siopsis, Ph.D. California Institute of Technology

Assistant Professors
V. Barzykin, Ph.D. Illinois-Urbana (Champaign); S.M. Spanier, Ph.D. Mainz

Research Professors
L.A. Pinnaduwage, Ph.D. Pittsburgh; M.R. Strayer, Ph.D. Massachusetts Institute of Technology; J. Zhang, Ph.D. Lanzhou

Research Associate Professor
P.E. Datskos, Ph.D. Tennessee; T.L. Ferrell, Ph.D. Clemson

Research Assistant Professors
A.J. Sanders, Ph.D. Tufts; S.A. Yost, Ph.D. Princeton

Director of Undergraduate Laboratories
J.E. Parks, Ph.D. Kentucky

Lecturers
T. Riedinger, M.S. Vanderbilt; S.J. Daunt, Ph.D. Queens (Kingston, Ontario, Canada)

PHYSICS MAJOR

Physics 137-138 or 135-136; Mathematics 141-142 and Computer Science 102 are prerequisites to the major.

Academic Concentration

The Academic Concentration consists of 41 hours: Mathematics 231 and 241; Physics 240, 311-312, 321, 361, 411-412, 421, 431-432, and 461. Physics 401 is recommended.

Applied Concentration

The Applied Concentration consists of 41 hours: Mathematics 241; Physics 240, 311-312, 321, 361, 401, 421, 441-442, 453-454 and 461.

Department of PHYSICS AND ASTRONOMY

http://www.phys.utk.edu/
General Concentration

The General Concentration consists of 40-41 hours: Mathematics 241, Physics 240, 311, 321 and 361, one lab course, chosen from 421, 453, and 461, and three core courses, chosen from 312, 411, 412, 431, 432, 441, 442. In addition, 12 coordinated hours in an area of the student’s special interest are to be chosen by the student in consultation with a departmental advisor.

Minor in Physics

A Physics minor consists of 23-25 hours: Physics 137-138, 240, or 135-136, 240 and twelve hours from Physics and Astronomy courses numbered 300 and above.

Minor in Astronomy

An Astronomy minor consists of 24 hours: one year of introductory astronomy, Astronomy 411, 490 (3), Physics 311-12, and 421.

Department of POLITICAL SCIENCE
http://web.utk.edu/~polisci/

Professors
P. K. Freeland (Head), Ph.D. Wisconsin; R. B. Cunningham, Ph.D. Indiana; M. M. Gant, Ph.D. Michigan State; M. R. Fitzgerald, Ph.D. Oklahoma; R. Gorman, Ph.D. New York; W. Lyons, Ph.D. Oklahoma; J. M. Scheb, Ph.D. Florida; T. A. Smith, Ph.D. Ohio State; O. H. Stephens, Jr. (Alumni Distinguished Service Professor), Ph.D. Johns Hopkins

Associate Professors
D. H. Folz, Ph.D. Tennessee; A. J. Nownes, Ph.D. Kansas; D. J. Houston, Ph.D. SUNY-Binghamton; R. L. Peterson, Ph.D. Yale; L. E. Richardson, Ph.D. Texas; Y. Zhong, Ph.D. Kentucky

Assistant Professors
M. Caprioli, Ph.D. Connecticut; M. Carcieri, Ph.D. California (Santa Barbara); D. Lipinski, Ph.D. Duke; D. Van Cott, Ph.D. Georgetown

The Department of Political Science offers a variety of courses of general interest to undergraduates, as well as ample opportunity for students to specialize in the study of government and politics. The Political Science discipline is broad and diverse, ranging from the study of campaigns and elections to analysis of political philosophy. Political Science gives attention to the theory and practice of government at all levels from local to international, as well as to the complex relationships between social values and the formulation of public policy. As a blend of the theoretical and the practical, Political Science has much to offer as an undergraduate major and as an elective field for the non-major. It provides a broad liberal arts background for professional careers in law, government service, foreign service, business, journalism, and public school teaching. It offers a good foundation for those wishing to pursue postgraduate study, especially in the fields of law, political science, and public administration. For those interested in specializing in fields outside of law and government, Political Science courses can contribute significantly to an awareness of public issues and an appreciation of the complexity of modern society.

Department of PSYCHOLOGY
http://web.utk.edu/~jlawler/

Professors
J. E. Lawler (Head), Ph.D. North Carolina; G.M. Burghardt (Alumni Distinguished Professor), Ph.D. Chicago; W.H. Calhoun, Ph.D. California (Berkeley); K. Davis, Ed.D. Georgia; S.J. Handel, Ph.D. Johns Hopkins; L. Handler, Ph.D. Michigan State; M. Hector, Ph.D. Michigan State; W. H. Jones, Ph.D.

POLITICAL SCIENCE MAJOR

Political Science 101 or 107, and 102 are prerequisites to the major. The major consists of 24 hours of courses numbered 300 or above. These 24 hours must include at least one course in each of the four areas of the discipline:

- Comparative Government and Politics 350, 361, 452, 454, 455, 459, 461, 463.
- International Relations 365, 366, 470, 471, and 472.
- Political Theory 300, 374, 475 and 476.

Honors Concentration

The Honors concentration encourages highly motivated students to obtain a superior liberal education and more rigorous preparation in the discipline. Admission is selective. The Honors concentration is normally a two year program. Political Science 101 or 107, and 102 are prerequisites. The concentration consists of 27 hours of courses numbered 300 or above, including 387, 388, 487, and 488. These 27 hours must include at least one course in each of the four areas of the discipline: Political Science 387 and 388 may be used to satisfy this requirement in the appropriate area.

To graduate with Honors in Political Science, the student must have a minimum GPA of 3.5 in Political Science, and a minimum cumulative GPA of 3.0.

Public Administration Concentration

Students majoring in Political Science who wish to prepare for a career in the public service may select to follow the concentration in Public Administration. Political Science 101 or 107, 102 and Economics 201 are prerequisites to the major in Political Science with a concentration in Public Administration. The concentration consists of 27 hours of course work in Political Science, Economics, and Accounting. Students must complete Political Science 340, 401, two of the following: Political Science 440, 441 or 442; and two of the following: Economics 471, 472 or Accounting 201. Students must also include one course in each of the three remaining fields of Political Science: Comparative Government and Politics, International Relations, and Political Theory.

Minor in Political Science

Prerequisites to the minor are Political Science 101 or 107 and 102. The minor consists of 15 hours of courses numbered 300 and above.

Department of PSYCHOLOGY

http://web.utk.edu/~jlawler/
Oklahoma State; K.A. Lawler, Ph.D. North Carolina; J.W. Lounsbury, Ph.D. Michigan State; J.F. Lubar, Ph.D. Chicago; J.C. Malone, Ph.D. Duke; H.R. Pollio (Alumni Distinguished Service Professor), Ph.D. Michigan; F. Samejima, Ph.D. Keio (Japan); R.A. Saudargas, Ph.D. Florida State; E.D. Sundstrom, Ph.D. Utah; C.B. Travis, Ph.D. California (Davis); R.G. Wahler, Ph.D. Washington

Psychology courses in Nursing and Social Work are not used in this major. Continuation in the Psychology major requires maintenance of a GPA of at least 2.00. Students placed on Academic Review will be informed in writing that they are on probation and their records will be reviewed. Students who continue on Academic Review will be dropped from the major.

Honors Concentration

The Psychology Department offers an Honors concentration that is a specially designed individualized mentorship program. University Honors students and psychology majors with ACT scores of 29 or higher (or SAT equivalent) may apply. Admission to the program will be on the basis of the review of the candidate’s application and interview by the Psychology Honors Faculty, normally in the student’s second year. Any semester with a GPA below 3.2 will lead to consideration of a student’s dismissal from the program by the program faculty. The Honors concentration includes all the requirements of the Psychology major and at least ten hours of upper division Psychology Honors courses including at least four hours of Psychology 347 (continuous registration is preferred), three hours of Psychology 367 and three hours of Psychology 467.

Minor in Psychology

The minor consists of 110 or equivalent; and 15 additional hours at the 300 level and above. (Psychology 399, 489, 491, 492, 493 cannot be used in this minor.)

Department of RELIGIOUS STUDIES

http://web.utk.edu/~religion

Professors

G.G. Schmidt (Head), Ph.D. Pittsburgh; J.L. Fitzgerald, Ph.D. Chicago; R.I.J. Hackett, Ph.D. Aberdeen; M.L. Levering, Ph.D. Harvard; R.V. Norman, Jr., Ph.D. Yale; C.H. Reynolds, Ph.D. Harvard
Associate Professors

R.W. Gwynne, Ph.D. Washington; J.O. Hodges, Ph.D. Chicago; M. Hulsether, Ph.D. Minnesota
Assistant Professors

R. Jacobs, Ph.D. Northwestern; J. Stiebert, Ph.D. Glasgow
Adjunct

T.J.A. Hefferman, Ph.D. Cambridge

The mission of the Department of Religious Studies is the academic study of the role of religion in history and culture. It also requires an awareness that the literature and history and sensibilities of Western European humanity are incomplete unless they are studies with those of other past and present cultures and civilizations.

RELIGIOUS STUDIES MAJOR

The major consists of at least 27 hours, all of which must be at the 300 level or above, including one course from each of the first six categories and two courses from category seven, one of which must be Religious Studies 499. Majors are strongly urged to take Religious Studies 300, and to do so as soon as possible after declaring their major. The remaining three hours, which complete this major, shall not include related language courses.

1. Methods and Issues in Religious Studies: 300, 301, 305, 313, 320, 342;
2. Religions and Cultures of South Asia: 374, 376;
3. Religions and Cultures of East Asia: 379, 383, 384;
4. Religions and Cultures of West Asia and Europe: 311, 321, 322, 332, 381, 385;
5. Religions and Cultures of Africa: 373;
6. Religions and Cultures of the Americas: 351, 352, 355;
7. Two 400-level courses including 499.

Student-Initiated Concentration

As an alternative, a student-initiated concentration, is available for students with special educational needs, such as those who intend to enter a graduate or professional school (s变动, law, medicine) which recommends a specific course of undergraduate study. A faculty member in Religious Studies will assist a student to formulate this major, which consists of at least 27 hours of credit at the 300 level or above, including 499. Up to 9 hours in this concentration may be taken in approved courses from other programs or departments in the College of Arts and Sciences. Students whose vocational goals
would best be served by such a major must discuss this option with a faculty member in the department, who will submit any specific proposal to the faculty in religious studies for approval.

Details regarding the major and Religious Studies courses are available in the departmental office, located in 501 McClung Tower, or from any member of the Religious Studies faculty.

Minor in Religious Studies

The minor consists of fifteen hours of courses at the 300 level or above, not including related language courses. It is recommended that students minoring in religious studies discuss their program with a member of the department faculty.

Russian

See Department of Modern Foreign Languages and Literatures.

Department of
SOCIOLOGY

http://web.utk.edu/~utsocdep/

Professors
D.W. Hastings, Ph.D. Massachusetts; T.C. Hood, Ph.D. Duke; R.G. Perrin, Ph.D. British Columbia; N.E. Shover, Ph.D. Illinois (Urbana); S.E. Wallace, Ph.D. Minnesota

Associate Professor
S. Kurth (Head), Ph.D. Illinois (Chicago); S. Cable, Ph.D. Pennsylvania State; A. Jalata, Ph.D. SUNY-Binghamton; R.E. Jones, Ph.D. Washington State

Assistant Professors
H. Bui, Ph.D. Michigan State; J. Gullick, Ph.D. California (Santa Cruz); L. Presser, Ph.D. Cincinnati; J. Shefner, Ph.D. California (Davis)

The undergraduate program investigates the development and structure of groups, social movements, organizations, and societies, as well as their interrelationships. Students develop an understanding of everyday social behavior, as well as the roles of deviance, conflict, and social inequality in producing social change. Through coursework, students acquire an awareness of the competing perspectives that exist within societies, the ability to critically analyze social trends, and the tools to evaluate social policies.

SOCIOLOGY MAJOR

Before applying to the department for admission to the major a student must complete either Sociology 110 or 120 or their Honors equivalent with a grade of C+ or above. Upon granting admission to the major, the department will assign the student an academic advisor who will help the student plan a program for the major. The major consists of 27 upper-division hours in Sociology and must include 321 and 331 and at least two 400-level courses

Minor in Sociology

The minor consists of 15 upper-division hours in Sociology and must include 321 and 331. Prerequisites to the minor are three lower-division hours in Sociology (either 110 or 120 or their Honors equivalent).

Criminal Justice Concentration

All prerequisites and upper-division courses required for general majors are required for this concentration. In addition, the concentration consists of 21 hours of upper-division Sociology as follows: 350, 351, 451, either 455, 459, or 492 and three additional courses selected in consultation with an advisor.

Environmental Issues and Globalization Concentration

All prerequisites required for the major are required for this concentration. The concentration in Environmental Issues and Globalization consists of Sociology 321 and 331 and 21 hours of upper-division sociology courses as follows: 360, either 442 or 446, two courses from 344, 464, and 465, and three courses selected in consultation with advisor.

Minor in Sociology with Concentration in
Environmental Issues and Globalization

The minor consists of 15 hours including Sociology 321, 331, 360 and two courses from 344, 442, 446 and 465. Prerequisite to the minor is either Sociology 110 or 120.

Spanish

See Department of Modern Foreign Languages and Literatures.

Department of
STATISTICS

See faculty list in the College of Business Administration.

Arts and Sciences students may major or minor in Statistics under the supervision of the faculty of the Statistics Department in the College of Business Administration. The major is designed to prepare students for graduate studies in statistics or for professional work in various applications of statistical methods, including applications in the natural and social sciences, business and industry. Contact the Statistics Department for further information on careers in statistics and appropriate courses to take. It is highly recommended that a student majoring in statistics have a minor in an area of application.

STATISTICS MAJOR

The major requires 33 semester hours including:

- Statistics 201 or 251;
- Statistics 320, 330, 365, 471;
- Two courses selected from Statistics 472, 473, 475, Mathematics 423, 424, 425;
- Mathematics 141-142 and 241-251, or upper-division Mathematics¹;  
- Two technical electives to be selected from upper-division courses in Mathematics, Computer Science, Engineering, Physics, or Chemistry, with the approval of the student’s advisor in the Department of Statistics.

¹Students who have completed Mathematics 123-125 should see an advisor to select courses to complete this requirement.
Statistics Minor

The minor consists of Statistics 201 or Statistics 251; an additional 12 hours from Statistics 320, 330, 365, 471, 472, 473, 475; and Mathematics 423, 424, 425.

Department of THEATRE
http://theatre.utk.edu

Professors
B. Robison (Head), M.F.A. North Carolina; W.R. Black, M.F.A. Illinois; M. Custer, M.F.A. Wisconsin

Associate Professors
E. Craven, M.A. Tennessee; B.K.A. Gould, M.F.A. Catholic; T. Weber, M.F.A. Alabama

Assistant Professor
M. Heil, M.F.A. Texas; B. Speas, M.F.A. Virginia Commonwealth; K. van den Berg, Ph.D. Indiana; K. Yeager, B.F.A. Penn State

The department’s program is designed to teach students to think critically; communicate fully, creatively, and effectively; and explore life and literature through study and practice of the theatrical event.

THEATRE MAJOR

Theatre 100 is a prerequisite to a major which consists of 200, 220, 300, 411, 412, 430; 1 course from 340, 345, 355, 362; and 12 additional hours of Theatre courses numbered 200 and above, 3 of which may be in cognate areas approved by the Department.

Minor in Theatre

Theatre 100 is a prerequisite to a minor which consists of 15 hours of Theatre courses, 6 of which must be upper division.
The Curriculum

The College of Business Administration at The University of Tennessee is widely recognized for its leadership role in implementing some of the most innovative and exciting curricular changes occurring during the last forty years of management education. In May of 2000, the faculty adopted a new curriculum structure for the undergraduate program, and that new structure is in practice today.

The new curriculum coursework is divided into four components: general education, pre-business core, business core, and major.

The 62 hours of general education focus on all aspects of human endeavor: written and oral communications; mathematics; social, behavioral, and natural sciences; humanities; foreign language; ethics; and the arts. General education courses span the student’s entire academic career.

The pre-business core courses (17 hours) are taken during the student’s sophomore year. The pre-business core provides students with the fundamentals of business education, introducing the tools, the environment, and the functions of contemporary business practices.

Building on the pre-business core foundation, the business core (23 hours) consists of integrated contemporary business management modules in supply chain management, demand management, lean operations, information management, the marketplace, and organizational behavior; discipline-specific courses in financial management and business strategy; and coursework on global and legal issues. As business management perspectives change, the topics in the business core will, by design, adapt.

Simultaneously, students are completing the coursework (24 hours) required by their chosen major. The College of Business Administration offers ten majors: accounting, business studies, economics, finance, human resource development, logistics and transportation, management, marketing, public administration, and statistics. Within the 24 hours of their major, students may study two areas of emphasis: their major with a collateral or their major with a dual concentration. With a collateral, students complete 15 hours in their major and 9 hours in their collateral area (with the exception of Statistics majors, who complete 18 hours in Statistics and 6 hours in their collateral area). With a dual concentration, students complete 12 hours in each area of emphasis. See the chart in this section for details of the collateral and dual concentration options for each major.

Upon the completion of this curriculum, students are awarded a Bachelor of Science in Business Administration.

Optional Second Major. College of Business Administration students who wish to pursue optional second majors within the College of Business Administration may do so by completing a minimum of 15 or 18 additional hours of primary emphasis (major) outlined by each department. These hours must be distinct from the 24 hours required by the student’s first major. Students who choose a second major in Business Studies or Public Administration must complete an additional 24 hours of major coursework.

College of Business Administration students who wish to pursue optional second majors in the College of Arts and Sciences may do so by completing all curricular requirements for the College of Business Administration and only the major requirements outlined by the College of Arts and Sciences department.
In either instance, the optional multiple majors (or second major) may be listed on the student’s transcript. Students should understand that meeting the requirements of second majors may lengthen their academic programs, and they should consult with advisors in both areas.

**Business Minor.** The College of Business Administration also offers a Business Minor for students pursuing majors in colleges other than the College of Business Administration. Those students must successfully complete the following requirements:

- Accounting 201-202
- Economics 201
- Statistics 201
- Business Administration 201
- Finance 301
- Marketing 300
- Management 300

All upper-division (300 level or above) coursework must be taken at The University of Tennessee. Students are responsible for meeting the listed prerequisites of any upper division courses taken. [For instance, Mathematics 125 or 141 is a prerequisite to Statistics 201 and either Business Administration 101, Computer Science 100, Agriculture and Natural Resources 290 or Human Resource Development 210 is a prerequisite to Business Administration 201.] Engineering students may substitute Chemical Engineering 301 for Statistics 201.

**Faculty**

Students in the College of Business Administration benefit from the countless faculty recognized for excellence in teaching, research, and public service. One of the first in the South to be accredited by the Association to Advance Collegiate Schools of Business International, The University of Tennessee’s College of Business Administration strives for excellence in all endeavors.

In addition to challenging students in the classroom, faculty also devote their energies to professional growth and commitment to the community by participating in other College of Business Administration programs, like the Global Business Institute, the Center for Executive Education, and the Center for Business and Economic Research.

**Technology**

Success in today’s business environment is largely a function of accessibility to, and interpretation of, information. This information provides the knowledge that allows employees and employers to make smart business decisions. Because today’s business world demands that employees be able to effectively use personal computers and diverse software applications, the College of Business Administration intertwines technology with its curriculum at all levels.

In order to take advantage of these unique learning tools, all business students will be required to have their own laptop computers when they start their business core courses, which is typically at the beginning of the junior year. With the new wireless network at The University of Tennessee, students will be able to use their laptop almost anywhere on campus. Additionally, the College of Business Administration maintains two computer labs containing 40 IBM-compatible computers to support freshman and sophomore classroom work and 10 laptop stations.
The Global Initiative

Seeking to instill a global perspective in all of its students, the College of Business Administration challenges undergraduate students to develop the requisite knowledge and skills to prosper in today’s global business environment. To help students meet that challenge, the College provides these critical tools: an enhanced core curriculum that covers international business topics in all relevant courses; extraordinary programs for international study and internships; and a unique opportunity to delve into the principles of international business through a collateral or dual concentration in International Business.

Students who choose a collateral or dual concentration in International Business will gain an understanding of how functional strategies are carried out and how to assess business opportunities in other cultures and countries. With the ability to appreciate different cultural perspectives, political, and economic institutions and to scan the broader environment of world events, students will be prepared to succeed in future international assignments in their careers.

Global Business Institute. The Global Business Institute, located in 9 Glocker, serves as the primary catalyst for international awareness and change in the College of Business Administration. By offering internships and career consultation, speakers and event planning, partnership coordination, and program and curricula facilitation, the Global Business Institute helps students, faculty, managers, and public policy makers meet the challenges of a global marketplace.

Where to Begin

Undergraduate Business Advising and Services Office. The mission of the Undergraduate Business Advising and Services Office is to provide excellent academic and educational program planning services to undergraduate students in the College of Business Administration. The Undergraduate Business Advising and Services Office, at 52 Glocker, maintains a full-time staff of academic advisors to answer students’ questions concerning majors, curriculum, and elective options. Student advising is achieved through these professional advisors in 52 Glocker and through faculty mentors when students are admitted to a major.

In addition to advising, the Undergraduate Business Advising and Services Office provides individual and group educational program planning, management of student data and enrollment information for the College, undergraduate student recruiting, administration of the undergraduate scholarship program, coordination of progression procedures to business majors, and career counseling.

Progression Standards. Acceptance to the College of Business Administration does not guarantee acceptance to a specific major. Students are admitted to the College as pre-majors and must earn admission to the major prior to the completion of 75 hours of coursework. Application to a major is a one-time only event and occurs as part of the student’s advising session in the Undergraduate Business Advising and Services Office the semester a student completes the following coursework:

Mathematics 125, 123, or 141-142 (6 or 8 hours); Written Communications (3 hours from English 255, 295, or 355); Accounting 201-202 (5 hours); Economics 201 (4 hours); Statistics 201 (3 hours); and Business Administration 201 (4 hours).

Students will progress to a major provided they have earned a 2.75 cumulative GPA (3.0 in Accounting) in the coursework listed above.

The Admissions Committee will review applications the week after final grades are posted and students will be notified via mail. If denied progression, the student must pursue a major in a college other than Business Administration at The University of Tennessee.

Only in unusual cases will an application be considered beyond 75 hours of completed coursework. Progression standards are subject to change. Current standards are always available in the Undergraduate Business Advising and Services Office at 52 Glocker.

Appeals. Students who have been denied progression to a major within the College of Business Administration may appeal to the Undergraduate Admissions Appeals Committee. Information on appeal procedures may be obtained in the Undergraduate Business Advising and Services Office, 52 Glocker.

Transfer Students within The University of Tennessee and from Other Institutions. Students in other colleges at The University of Tennessee or from other institutions should apply for progress to the College of Business Administration at the earliest possible date—no later than the completion of 75 hours. Only in exceptional cases will application be considered after 75 hours of coursework (at The University of Tennessee or elsewhere) have been attempted. The following minimum requirements must be met in order to be considered for admission to a major:

The student must have earned a minimum 2.75 cumulative average in the courses required for progression (3.0 for Accounting majors).

Progression standards are subject to change; current standards are available in the Undergraduate Business Advising and Services Office, Glocker 52.

Articulation Agreements. The College of Business has special transfer articulation agreements with some Tennessee community colleges, leading to admission with junior standing in particular majors at The University of Tennessee. Students are awarded an associate’s degree by the specified community college and a baccalaureate degree by The University of Tennessee, provided the student successfully completes all the courses required in a particular program and meets the progression standards. All other academic regulations of the degree-granting institutions must also be satisfied.

Details on specific programs and requirements are available from the Office of Undergraduate Admissions at The University of Tennessee or from the specified community college.
Enrichment Opportunities

Executive Undergraduate Program. Top students are invited into the Executive Undergraduate Program, a professional enrichment experience. Members meet with executives who present small group workshops and luncheons and share experiences with students who have similar goals and interests.

Executive in Residence. A senior-level Executive in Residence course brings distinguished business and industrial leaders to campus for lectures with small groups of students. In these sessions, students have the opportunity to ask questions of some of the nation’s business leaders regarding domestic and international strategic planning and other current business topics.

Scholarships. A limited number of scholarships are available for highly qualified students. Students are invited to apply for a College of Business Administration scholarship. Selection criteria considered for scholarships include: academic merit, financial need, and leadership.

To be considered for a scholarship, students must meet the following criteria:

• Unweighted grade point average of 3.0;
• ACT composite score of 23 or SAT combined score of 1050.

Students must complete either the Entering Freshman Academic Scholarship Application or the Returning and Transfer Student Undergraduate Scholarship Application, both of which can be obtained from UT’s Office of Financial Aid and Scholarships, 115 Student Services Building or online at http://web.utk.edu/~finaid/, and submit it by the date printed on the application, with the following information:

• A current high school transcript and a current college transcript, if the student is a transfer student;
• ACT or SAT scores.

Foreign Study. Several opportunities for study abroad are available to College of Business Administration students, such as group programs arranged and supervised by the College’s departments on a full semester or summer term, direct exchange, summer study, and semester programs organized by the Programs Abroad division of the Center for International Education, and individualized programs.

Students planning foreign study must first meet with their academic advisor to discuss curricular issues.

Off-Campus Study. Recognizing that learning is not restricted to formal classroom situations, students may earn credit towards graduation for approved off-campus study. It may include certain types of work experiences or community involvement. Such study may be undertaken only with prior approval of a faculty member and the department granting credit.
**Requirements for the Bachelor of Science in Business Administration • Accounting Major**

### Freshman

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>English 101, 102</td>
<td>6</td>
</tr>
<tr>
<td>Math 123-125 or 141-142</td>
<td>6 or 8</td>
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<tr>
<td>Intermediate Foreign Language</td>
<td>6</td>
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<tr>
<td>Natural Science</td>
<td>8</td>
</tr>
<tr>
<td>Social Science</td>
<td>6</td>
</tr>
<tr>
<td>Business Administration 101</td>
<td>1</td>
</tr>
</tbody>
</table>

### Sophomore

| Accounting 201, 202                                                  | 4     |
| Economics 201                                                       | 4     |
| Written Communications                                               | 3     |
| Ethics                                                              | 3     |
| Arts                                                                 | 3     |
| Statistics 201                                                      | 3     |
| Business Administration 201                                           | 4     |

### Junior

| Business Administration 331-332                                      | 4     |
| Business Administration 341-342                                      | 4     |
| Finance 301                                                          | 3     |
| Accounting 311                                                       | 3     |
| Information Management 341                                           | 3     |
| Business Administration 351-352                                      | 3     |
| Business Administration 361                                           | 3     |
| Accounting 321                                                       | 3     |
| Accounting 411                                                       | 3     |
| Collateral                                                          | 3     |

### Senior

| Accounting 414 or 431                                                | 3     |
| Business Law 301                                                    | 3     |
| Non-US History                                                      | 6     |
| Management 401                                                      | 3     |
| Collateral                                                          | 3     |
| Electives                                                           | 0     |
| Total                                                               | 126   |

1. Must be completed by the end of the Freshman Year.
2. Students who complete English 118, Honors English Composition, with a grade of A or B will complete their English Composition requirement by choosing English 102 or a sophomore literature course in the English Department. If the sophomore literature course appears on the list for the Humanities Literature requirement, the course may also be counted toward the Humanities requirement.
3. Mathematics—Mathematics 125 or 141 are prerequisites for Statistics 201, which is taken during the second semester of the Sophomore Year. As a result, either Mathematics 125 or 141 must be completed by the end of the first semester of the Sophomore Year. Students testing into Mathematics 100, 110, 115, or 119 must complete these courses during their Freshman Year to ensure that Mathematics 125 or 141 can be completed during the first semester of the Sophomore Year. Students who have not completed Mathematics 125 by the end of their Freshman Year should take Mathematics 125 in the first semester of their Sophomore Year, prior to taking Mathematics 123.
4. Foreign Language—Students may complete this requirement in one of three ways: 1) Complete the intermediate sequence of a foreign language. Students may either continue the Foreign Language begun in high school or start a new sequence. Courses taken at other than the intermediate level are treated as non-baccalaureate electives. 2) Demonstrate competency on a departmental placement or proficiency examination or by AP or CLEP credit. 3) Students whose native language is not English may meet this requirement by passing English 131 and 132 and by passing two English language literature courses taught by the English Department at the 200-level. Non-native speakers may also use these English Language classes to satisfy the Humanities requirement.
5. Natural Science—Any two-course sequence from the list below: NOTE: Certain restrictions may apply to receiving credit in some of these areas. See individual course descriptions or advisor for details. Astronomy 161-162, or 217-218; Biology 101-102; Botany 110-120; Chemistry 100-110, 120-130, or 128-138; Geography 131-132; Geology 101-102, or 101-103, or 107-108, Physics 135-136, or 137-138, or 221-222. Social Science—Two courses from: Anthropology 120, 130, 320; Geography 101, 102, 320, 332; Political Science 101, 102, 107; Psychology 110, 117, 220, 360; Sociology 110, 117, 120, 127, 232, 250, 370. Written Communications—One course from: English 255, 295, 355.
6. Ethics—One course from: Philosophy 242, 342, or 344.
7. Arts—One course from the courses listed below: Architecture 111; Art 191; Art History 172, 173, 183; Cinema Studies 281; Classics 232, 233; English 263, 281; Music History 110, 115, 120, 125, 330; Music Theory 100; Speech 280; Theatre 100, 220, 221; Women’s Studies 330.
8. Humanities—Three hours from courses listed below: African and African American Studies 311, 312, 313, 314; Classics 253; Comparative Literature 202, 203; English 201, 202, 221, 222, 231, 232, 233, 251, 252, 253, 254, 333, or 200-level Honors Literature Courses; Any foreign language courses whose content is literature including foreign language in English translation; Medieval Studies 261, 262; Religious Studies 312, 313, 314; Russian 221, 222; Women’s Studies 210, 215.
10. Collateral—9 hours (choice of one of three areas): Finance—Finance 425; Finance 435; and Finance 455 or Accounting 414: Information Management—Information Management 342; Information Management 351; Information Management 442*; Logistics and Transportation—Logistics and Transportation 310; Logistics and Transportation 421; Logistics and Transportation 411 and Logistics and Transportation 441*. *(Early in their senior year, students normally make the decision whether to enter the job market upon graduation or apply to the Master of Accountancy program. Students planning to enter the MAcc program should take Accounting 431 for Information Management 442 in the Information Management collateral, or for Logistics and Transportation 441 in the Logistics and Transportation collateral. Accounting 414 and 431 are both prerequisites to the MAcc program.)*

**BUSINESS STUDIES MAJOR (Interdepartmental Program)**

The Business Studies program offers a broad education that allows students to gain in-depth knowledge of a particular area of business while retaining an overall perspective. After completing the core requirements for a business degree, Business Studies majors complete 24 additional hours in upper-division business courses.

The wide range of business courses required by this curriculum provides a solid base knowledge well suited for entry-level positions in many organizations. Graduates of the Business Studies program begin their careers as management trainees in sales, banking, insurance, and marketing. This curriculum is also ideal for students interested in pre-law, particularly with specialization in corporate law.

**Requirements for the Bachelor of Science in Business Administration • Business Studies Major**

### Freshman

<table>
<thead>
<tr>
<th>Course</th>
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<tr>
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</tr>
</tbody>
</table>

### Sophomore

| Accounting 201, 202                                                  | 5     |
| Economics 201                                                       | 4     |
| Written Communications                                               | 3     |
| Ethics                                                              | 3     |
| Arts                                                                 | 3     |
| Statistics 201                                                      | 3     |
| Business Administration 201                                           | 4     |

### Junior

| Business Administration 331-332                                      | 4     |
| Business Administration 341-342                                      | 4     |
| Finance 301                                                          | 3     |
| Accounting 311                                                       | 3     |
| Information Management 341                                           | 3     |
| Business Administration 351-352                                      | 3     |
| Business Administration 361                                           | 3     |
| Accounting 321                                                       | 3     |
| Accounting 411                                                       | 3     |
| Collateral                                                          | 3     |

### Senior

| Accounting 414 or 431                                                | 3     |
| Business Law 301                                                    | 3     |
| Non-US History                                                      | 6     |
| Social Science                                                        | 6     |
| Business Administration 101                                          | 1     |
Business Administration 351-352 ................................................................. 3
Business Administration 361 ....................................................................... 3
Economics 311 ............................................................................................. 3
Economics 313 ............................................................................................. 3

**Senior**

Finance 455 .................................................................................................. 3
Information Management 341 ................................................................. 3
Logistics and Transportation 310 or Management 341 ............................. 3
Marketing 340 .............................................................................................. 3
Statistics 320 ................................................................................................ 3
Business Law 301 ........................................................................................ 3
Management 401 ........................................................................................ 3
Electives ......................................................................................................... 7-9

Total 126

1Must be completed by the end of the Freshman Year.
2Students who complete English 118, Honors English Composition, with a grade of A or B will complete their English Composition requirement by choosing English 102 or a sophomore literature course in the English Department. If the sophomore literature course appears on the list for the Humanities Literature requirement, the course may also be counted toward the Humanities requirement.
3Mathematics—Mathematics 125 or 141 are prerequisites for Statistics 201, which is taken during the second semester of the Sophomore Year. As a result, either Mathematics 125 or 141 must be completed by the end of the first semester of the Sophomore Year. Students testing into Mathematics 100, 110, 115, or 119 must complete these courses during their Freshman Year to ensure that Mathematics 125 or 141 can be completed during the first semester of the Sophomore Year. Students who have not completed Mathematics 125 by the end of their Freshman Year should take Mathematics 125 in the first semester of their Sophomore Year, prior to taking Mathematics 123.
4Foreign Language—Students may complete this requirement in one of three ways — 1) Complete the intermediate sequence of a foreign language. Students may either continue the Foreign Language begun in high school or start a new sequence. Courses taken at other than the intermediate level are treated as non-business electives. 2) Demonstrate competency on a departmental placement or proficiency examination or by AP or CLEP credit. 3) Students whose native language is not English may not meet this requirement by passing English 131 and 132 and by passing two English language literature courses taught by the English Department at the 200-level. Non-native speakers may also use one of these English Literature classes to satisfy the Humanities requirement.
5Natural Science—Any two-course sequence from those listed below: NOTE: Certain restrictions may apply to receiving credit in some of these areas. See individual course descriptions or advisor for details. Astronomy 161-162, or 217-218; Biology 101-102; Botany 110-120; Chemistry 100-110, 120-130, or 128-138; Geology 131-132; Geology 101-102, 101-102, or 101-103, or 107-108; Physics 135-136, or 137-138, or 221-222.
6Social Science—Two courses from: Anthropology 120, 130, 320; Geography 101, 102, 320, 323; Political Science 101, 102, 107; Psychology 110, 117, 220, 360; Sociology 110, 117, 120, 127, 232, 250, 370.
7Written Communications—One course from: English 255, 295, 355.
8Ethics—One course from: Philosophy 242, 342, or 344.
9Arts—One course from the courses listed below: Architecture 111; Art 191; Art History 172, 173, 183; Cinema Studies 281; Classics 232, 233; English 263, 281; Music History 110, 115, 120, 123, 130, 135, 330; Music Theory 100; Speech 201; Theatre 100, 220, 221; Women’s Studies 330.
10Humanities—Three hours from courses listed below: African and African American Studies 231; Asian Languages 311, 312, 313, 314; Classics 253; Comparative Literature 202, 203; English 201, 202, 221, 222, 223, 231, 232, 233, 251, 252, 253, 254, 335, or 200-level Honors Literature Courses; Any foreign language courses whose content is literature including foreign literature in English translation; Medieval Studies 261, 262; Religious Studies 312, 313; Russian 221, 222; Women’s Studies 210, 215.
11Oral Communications—One course from: Speech 210, 240.

**ECONOMICS MAJOR**

The Economics major thoroughly examines the economic processes of society, focusing on the production, distribution, and consumption of goods and services. Students in economics may select courses from the fields of economic development, industrial organization, international economics, labor economics, monetary economics, public finance, quantitative methods, and regional economics. All students majoring in economics take courses in economic theory. In addition, the student gains a knowledge of our culture and society as well as the world of business by completing courses in arts and sciences and in the functional areas of business. Graduates in economics are in demand in many sectors including industry, commerce, finance, trade associations, and government offices at all levels.

**Collateral Option**

**Requirements for the Bachelor of Science in Business Administration • Economics Major • Collateral Option**

<table>
<thead>
<tr>
<th>Freshman</th>
<th>Hours Credit</th>
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</thead>
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<td>1English 101, 102 ...............................................................</td>
<td>6</td>
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<td>4Social Science .................................................................</td>
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<td>5Business Administration 101 ..............................................</td>
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<table>
<thead>
<tr>
<th>Sophomore</th>
<th>Hours Credit</th>
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<tbody>
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<td>Accounting 201, 202 ..........................................................</td>
<td>5</td>
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<td>Economics 201 .................................................................</td>
<td>5</td>
</tr>
<tr>
<td>7Written Communications ..................................................</td>
<td>3</td>
</tr>
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<td>8Ethics ..............................................................................</td>
<td>3</td>
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<tr>
<td>9Arts ..............................................................................</td>
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<td>12Humanities (Literature) ..................................................</td>
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<td>Business Administration 341-342 .......................................</td>
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<tr>
<td>Economics 311 ...............................................................</td>
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<td>14Economics 313 ..............................................................</td>
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<td>16Business Administration 361 .........................................</td>
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</table>

**Department of ECONOMICS**

**Professors**

R.A. Bohm (Interim Head), Ph.D. Washington (St. Louis); H.S. Chang, Ph.D. Vanderbilt; D.P. Clark, Ph.D. Michigan State; W.F. Fox (William B. Stokely Distinguished Professor of Business), Ph.D. Ohio State; H.W. Herzog, Jr. (Alma and Hal Reagan Professor), Ph.D. Maryland; M. McKee (J. Fred Holly Chair of Excellence), Ph.D. Carlton (Canada); M.N. Murray (Douglas and Brenda Horne Professor), Ph.D. Syracuse

**Associate Professor**

J.A. Gauger, Ph.D. Iowa State

**Assistant Professors**

K. Baker (Visiting), Ph.D. New Mexico; D. Bruce, Ph.D. Syracuse; M. Evans, Ph.D. Colorado; S. Gilpatric, Ph.D. Texas A&M; M. Mohsin, Ph.D. York (Canada); M. Munkin, Ph.D. Indiana; R. Santore, Ph.D. Ohio State; A. Toossi (Visiting), Ph.D. Illinois; C. Vossler, Ph.D. Cornell

**Lecturers**

D. Bueckman, Ph.D. Tennessee; G. Schuler, Ph.D. Houston

**Emeriti Faculty**

P. Davidson (J. Fred Holly Chair of Excellence Emeritus), Ph.D. Pennsylvania; J.R. Moore (Alumni Distinguished Service Professor Emeritus), Ph.D. Cornell; W.C. Neale, Ph.D. London School of Economics; M. Russell, Ph.D. Oklahoma; G.A. Spiva, Jr., Ph.D. Texas
Must be completed by the end of the Freshman Year.

Students who complete English 118, Honors English Composition, with a grade of A or B will complete their English Composition requirement by choosing English 102 or a sophomore literature course in the English Department. If the sophomore literature course appears on the list for the Humanities Literature requirement, the course may also be counted toward the Humanities requirement.

Mathematics—Mathematics 125 or 141 are prerequisites for Statistics 201, which is taken during the second semester of the Sophomore Year. As a result, either Mathematics 125 or 141 must be completed by the end of the first semester of the Sophomore Year. Students testing into Mathematics 100, 110, 115, or 119 must complete these courses during their Freshman Year to ensure that Mathematics 125 or 141 can be completed during the first semester of the Sophomore Year. Students who have not completed Mathematics 125 by the end of their Freshman Year should take Mathematics 125 in the first semester of their Sophomore Year, prior to taking Mathematics 123.

Foreign Language—Students may complete this requirement in one of three ways - 1) Complete the intermediate sequence of a foreign language. Students may either continue the Foreign Language begun in high school or start a new sequence. Courses taken at other than the intermediate level are treated as non-business electives. 2) Demonstrate competency on a departmental placement or proficiency examination or by AP or CLEP credit. 3) Students whose native language is not English may meet this requirement by passing English 131 and 132 and by passing two English language literature courses taught by the English Department at the 200-level. Non-native speakers may also use one of these English literature classes to satisfy the Humanities requirement.

Natural Science—Any two-course sequence from those listed below: NOTE: Certain restrictions may apply to receiving credit in some of these areas. See individual course descriptions or advisor for details. Astronomy 161-162, or 217-218; Biology 101-102; Botany 110-120; Chemistry 100-110, 120-130, or 128-138; Geography 131-132; Geology 101-102, 103-104, or 107-108; Physics 135-136, or 137-138, or 221-222.

Social Science—Two courses from: Anthropology 120, 130, 320; Geography 101, 102, 320, 323; Political Science 101, 102, 107; Psychology 110, 117, 220, 360; Sociology 110, 117, 120, 127, 252, 250, 370.

Written Communications—One course from: English 255, 295, 355.

Ethics—One course from: Philosophy 242, 342, or 344.

Arts—One course from the courses listed below: Architecture 111; Art 191; Art History 172, 173, 183; Cinema Studies 281; Classics 232, 233; English 263, 281; Music History 110, 115, 120, 325, 330; Music Theory 100; Speech 280; Theatre 100, 220, 221; Women’s Studies 330.

Humanities—Three hours from courses listed below: African and African American Studies 233; Asian Languages 311, 312, 313, 314; Classics 253; Comparative Literature 202, 203; English 201, 202, 221, 222, 231, 232, 233, 234, 235, 252, 253, 254, 333, or 300; level Honors Literature Courses; Any foreign language course whose content is literature including foreign literature in English translation; Medieval Studies 261, 262; Religious Studies 312, 313; Russian 221, 222; Women’s Studies 210, 215.

Oral Communications—One course from: Speech Communication 210, 240.

Economics Sequence—Choose one of the following combinations: Economics 331 and Economics 435; Economics 351 and Economics 413; Economics 381 and Economics 482 (Mathematics 141-142 Prerequisite).

Collateral Sequence—Choose the combination that builds on the Economics Sequence: Finance 425 and Finance 455 (combine with 331,435); Finance 425 and Finance 435 (combine with 351,413); Statistics 472 and Statistics 475 (combine with 381,482); Mathematics 241 and Mathematics 251 (combine with 381,482).

Economics Electives—Choose any two upper division Economics courses.


Traditional Option

Requirements for the Bachelor of Science in Business Administration • Economics Major • Traditional Option

Junior

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
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<tbody>
<tr>
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<td>Business Administration 341-342</td>
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<tr>
<td>Finance 301</td>
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<tr>
<td>Economics 311</td>
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<td>Economics 313</td>
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<td>Business Administration 351-352</td>
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<td>Business Law 301</td>
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<td>Business Law 301</td>
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Total 126

Senior

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<td>Non-US History</td>
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<td>Management 401</td>
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<td>Electives</td>
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Total 126

Multidisciplinary Sequence

Requirements for the Bachelor of Science in Business Administration • Economics Major • Multidisciplinary Sequence Option

Junior

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
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<tbody>
<tr>
<td>Business Administration 331-332</td>
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<td>Business Administration 341-342</td>
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<td>Business Law 301</td>
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<tr>
<td>Multidisciplinary Sequence</td>
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</tbody>
</table>

Total 126

Department of Finance

Professors

J.W. Wansley (Head and Clayton Homes Chair of Excellence), Ph.D. South Carolina; H.A. Black (James F. Smith Professor), Ph.D. Ohio State; T.P. Boehm (AmSouth Scholar), Ph.D. Washington University (St. Louis); R.P. DeGennaro (SunTrust Professor), Ph.D. Ohio State; M.C. Ehhrhardt (Castagna Professor), Ph.D. Georgia Tech; G.C. Philippatos (Distinguished Chaired Professor of Banking and Finance), Ph.D. New York; R.E. Shrieves (Voigt Professor), Ph.D. California (Los Angeles); J.M. Wachowicz, Jr. (AmSouth Scholar), Ph.D. Illinois
FINANCE MAJOR

The finance major gives students the flexibility to tailor their programs to fit their particular career goals and to prepare for one (or more) of the following specialty areas. Courses in Investments lead to career opportunities in investment analysis, commercial and investment banking, and insurance companies. The course in Real Estate is designed for students who are interested in real estate brokerage, appraising, taxation, law, property management, real estate development, mortgage lending and banking, construction, government loan guarantees, and insurance. The course in Corporate Finance leads to opportunities in corporate forecasting, planning, and control; cash management; and capital and financial analysis positions. The course in Financial Institutions and Markets prepares students for opportunities in the management of financial institutions, as well as within the government organizations related to the opportunities in the management of financial institutions, as well as within the government organizations related to the industry. Courses in Insurance and Risk Management prepare students for opportunities in insurance, business, and public risk management.

Requirements for the Bachelor of Science in Business Administration • Finance Major

**Freshman**

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<tr>
<th>Course</th>
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**Sophomore**

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**Junior**

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**Senior**

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<tr>
<td>Electives</td>
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</table>

**Total** 126

**Notes:**
1. Must be completed by the end of the Freshman Year.
2. Students who complete English 118, Honors English Composition, with a grade of A or B will complete their English Composition requirement by choosing English 102 or a sophomore literature course in the English Department. If the sophomore literature course appears on the list for the Humanities Literature requirement, the course may also be counted toward the Humanities requirement.
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7. Ethics—One course from: Philosophy 242, 342, or 344.
8. Arts—One course from the courses listed below: Architecture 111, Art 191; Art History 172, 173, 183; Cinema Studies 281; Classics 232, 233; English 263, 261; Music History 110, 115, 120, 125, 330; Music Theory 100, Speech 280, Theatre 100, 220, 221; Women’s Studies 330.
9. Humanities—Three hours from courses listed below: African and African American Studies 233; Asian Languages 311, 312, 313, 314; Classics 253; Comparative Literature 202, 203; English 201, 202, 221, 222, 231, 232, 233, 251, 252, 253, 254, 333, or 200-Level Honors Literature Courses; Any foreign language courses whose content is literature including foreign literature in English translation; Medieval Studies 261, 262; Religious Studies 312, 313; Russian 221, 222; Women’s Studies 210, 215.
11. Collateral—Nine hours of a course area: Accounting: ACC 311; ACC 321; and any one of IM 341 or ACC 414 or ACC 431; Decision Analysis: IM 341; IM 342; and choice of either ACC 311 or STAT 471; Economics: ECON 311; ECON 313; and choice of either ECON 321 or ECON 482; General Management: MGT 321; MGT 421; MGT 431; Information Management: IM 341; IM 342; IM 351; International Business BA 371; MGT 471; ECON 321 or 323; Logistics & Transportation: LT 310; LT 411; LT 421; LT 441; Marketing: MKT 345; MKT 460; and any 2 of MKT 452, MKT 454, MKT 456, or MKT 458; Quantitative Studies: MAT 251; MAT 251; MAT 401; Statistics: STAT 320; STAT 471; and choice of either STAT 472 or STAT 475.

Department of HUMAN RESOURCE DEVELOPMENT

**Program Liaison**

M.L. Morris, Ph.D. CFLE Tennessee

**Associate Professors**

V. Kupritz, Ph.D. Virginia Tech; M. L. Morris, Ph.D. CFLE Tennessee; V.J. Stout, Ed.D. Tennessee
Assistant Professors
S.J. Bartley, Ph.D. Tennessee; D.H. Lim, Ph.D. Illinois; R.H. Pierce, Ph.D. Ohio State

Lecturer
D. L. Mackey, Ph.D. Tennessee

HUMAN RESOURCE DEVELOPMENT MAJOR

The Human Resource Development Program offers instructional specializations and credentialing programs for professionals preparing for public and private sector communities and corporations. Students admitted into the HRD program will be expected to develop and demonstrate mastery of a wide range of instructional competencies that are stipulated by international organizations such as International Board of Standards for Training, Performance, and Instruction (IBSTPI), American Society for Training and Development (ASTD), and Society of Human Resource Management (SHRM).

The Bachelor of Science degree prepares those individuals who wish to develop professional expertise in training and human resource development to work in the private and public sectors in capacities such as program designers, subject matter experts, and instructional specialists.

Requirements for the Bachelor of Science in Business Administration • Human Resource Development Major

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<tr>
<th>Freshman</th>
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<tbody>
<tr>
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<td>Business Administration 331-332</td>
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<tr>
<td>Electives</td>
<td>7-9</td>
</tr>
</tbody>
</table>

Total 126
Students who complete English 118, Honors English Composition, with a grade of A or

Management majors may choose from several different areas of emphasis. Operations management and personnel management are the most specified, but an individualized program may be developed. The foundation is provided by studies of organizational structure and process, human behavior in organizations, and business strategy. Career opportunities include staff positions in production planning, inventory management, employment, training, and recruiting. In addition, opportunities are available in line management in all types of industries, such as manufacturing, retailing, banking, transportation, and hospitality.

Collateral Option

Requirements for the Bachelor of Science in Business Administration • Management Major • Collateral Option

<table>
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<th>Hours Credit</th>
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<td>5. Statistics 201</td>
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<td>7. Humanities (Literature)</td>
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<td>6. Management 321</td>
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<tbody>
<tr>
<td>1. Management 431</td>
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</tr>
<tr>
<td>2. Management Electives</td>
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<tr>
<td>3. Collateral</td>
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<td>4. Business Law 301</td>
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<td>5. Management 401</td>
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<td>6. Electives</td>
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</table>

Total 126

<table>
<thead>
<tr>
<th>Lecturers</th>
</tr>
</thead>
<tbody>
<tr>
<td>J.C. Anderson, Master of International Management, Thunderbird; E.K.P. Atchley, Ph.D. Tennessee; W.L. Ilic, M.A. Tennessee; R.L. Nubert, Ph.D. Tennessee</td>
</tr>
</tbody>
</table>

Emeriti Faculty

H.D. Dewhurst, Ph.D. Texas; R.C. Maddox, Ph.D. Texas

College of Business Administration

Requirements for the Bachelor of Science in Business Administration • Management Major • Concentration with International Business

<table>
<thead>
<tr>
<th>Junior</th>
<th>Hours Credit</th>
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<tbody>
<tr>
<td>1. Business Administration 331-332</td>
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<tr>
<td>2. Business Administration 341-342</td>
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<tr>
<td>3. Finance 301</td>
<td>3</td>
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<td>4. Business Administration 351-352</td>
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<td>5. Business Administration 361</td>
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<td>6. Management 321</td>
<td>3</td>
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<tr>
<td>7. Management 341</td>
<td>3</td>
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<tr>
<td>8. Non-US History</td>
<td>6</td>
</tr>
<tr>
<td>9. Economics 321 or 323</td>
<td>3</td>
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</table>

Management Electives—Choose two from MGT 411, 432, 440, 441, 471, 492, 493.

Dual Concentration with International Business

Requirements for the Bachelor of Science in Business Administration • Management Major • Dual Concentration with International Business

<table>
<thead>
<tr>
<th>Junior</th>
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</thead>
<tbody>
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<tr>
<td>6. Management 321</td>
<td>3</td>
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<td>7. Management 341</td>
<td>3</td>
</tr>
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<tr>
<td>9. Economics 321 or 323</td>
<td>3</td>
</tr>
</tbody>
</table>

Senior

| Management 431 | 3 |
| Management 441 | 3 |
| Business Administration 400 | 3 |
| Business Administration 371 | 3 |
| Management 471 | 3 |
Logistics and Transportation

Professors
F.W. Davis, Jr., Ph.D. Michigan State; J.T. Mentzer (Bruce Chair of Excellence in Business), Ph.D. Michigan State

Associate Professors
J.H. Foggin, Ph.D. Indiana; M.C. Holcomb, Ph.D. Tennessee; L.M. Rinehart, Ph.D. Tennessee; T.P. Stank, Ph.D. University of Georgia

Assistant Professors
T.L. Esper, Ph.D. University of Arkansas; F. Sahin, Ph.D. Texas A&M

Emeriti Faculty
G.N. Dicer, D.B.A. Indiana

LOGISTICS AND TRANSPORTATION MAJOR

Logistics has responsibility for the movement of raw materials and component parts into and within a business firm, and to the distribution of finished products and services to customers. A major component of logistics, transportation refers to the physical movement of goods between two geographic points.

Because having products and/or services in the right place at the right time is critical for success in any business, logistics plays a critical role in a firm’s comprehensive supply chain. A career in logistics offers students the opportunity to make a significant contribution to corporate effectiveness in this area. Students interested in transportation will typically accept employment with a carrier (motor, rail, water, and air) or with the logistics and transportation department of a business that purchases transportation services from carriers.

The internationally recognized logistics and transportation program at The University of Tennessee is currently regarded as one of the most comprehensive and contemporary programs in the nation. The program offers a fundamental yet innovative curriculum. Students develop important skills required of logistics professionals, as well as learn how logistics helps solve business supply chain management problems.

Collateral Option

Requirements for the Bachelor of Science in Business Administration • Logistics and Transportation Major • Collateral Option

Freshman
1) English 101,102 ................................................................. 3
2) Math 123-125 or 141-142 ............................................. 6 or 8
3) Intermediate Foreign Language ................................... 3
4) Natural Science ................................................................. 8
5) Social Science ................................................................. 6
6) Business Administration 101 ........................................... 1

Sophomore
7) Accounting 201,202 ....................................................... 5
8) Economics 201 ................................................................. 4
9) Written Communications .............................................. 3
10) Ethics ........................................................................... 3
11) Arts ............................................................................. 3
12) Statistics 201 ................................................................. 3
13) Business Administration 201 ....................................... 4
14) Humanities (Literature) .............................................. 3
15) Oral Communications ................................................ 3

Junior
16) Business Administration 331-332 ............................... 4
17) Business Administration 341-342 ............................... 4
18) Finance 301 ................................................................. 3
19) Business Administration 351-352 ............................... 3
20) Business Administration 361 ....................................... 3
21) Non-US History ............................................................. 6
22) Logistics and Transportation 310 ............................... 3
23) Collateral ................................................................. 3
24) Elective ..................................................................... 3

Senior
25) Logistics and Transportation 411 ............................... 2
26) Logistics and Transportation 421 ............................... 2
27) Logistics and Transportation 441 ............................... 2
28) Collateral ................................................................. 6
29) Business Law 301 ........................................................ 3
30) Logistics and Transportation 412 ............................... 3
31) Logistics and Transportation 460 ............................... 3
32) Management 401 ........................................................ 3
33) Electives ..................................................................... 4-6

Total 126

1Must be completed by the end of the Freshman Year.
2Students who complete English 118, Honors English Composition, with a grade of A or B will complete their English Composition requirement by choosing English 102 or a sophomore literature course in the English Department. If the sophomore literature course appears on the list for the Humanities Literature requirement, the course may also be counted toward the Humanities requirement.
3Mathematics—Mathematics 125 or 141 are prerequisites for Statistics 201, which is taken during the second semester of the Sophomore Year. As a result, either Mathematics 125 or 141 must be completed by the end of the first semester of the Sophomore Year. Students testing into Mathematics 100, 110, 115, or 119 must complete these courses during their Freshman Year to ensure that Mathematics 125 or 141 can be completed during the first semester of the Sophomore Year. Students who have not completed Mathematics 125 by the end of their Freshman Year should take Mathematics 125 in the first semester of their Sophomore Year, prior to taking Mathematics 123.
4Foreign Language—Students may complete this requirement in one of three ways - 1) Complete the intermediate sequence of a foreign language. Students may either continue the Foreign Language begun in high school or start a new sequence. Courses taken at other than the intermediate level are treated as non-business electives. 2) Demonstrate competency on a departmental placement or proficiency examination or by AP or CLEP credit. 3) Students whose native language is not English may meet this requirement by passing English 131 and 132 and by passing two English language literature courses taught by the English Department at the 200-level. Non-native speakers may also use one of these English Literature classes to satisfy the Humanities requirement.
5Natural Science—Any two-course sequence from those listed below: NOTE: Certain restrictions may apply to receiving credit in some of these areas. See individual course descriptions or advisor for details. Astronomy 161-162; or 217-218; Biology 101-102; Botany 110-120; Chemistry 100-110, 120-130, or 128-138; Geography 131-132; Geology 101-102, or 101-103, or 107-108; Physics 135-136, or 137-138, or 221-222.
**Dual Concentration with International Business**

**Requirements for the Bachelor of Science in Business Administration • Logistics and Transportation Major • Dual Concentration with International Business**

**Junior**

<table>
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<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Business Administration 331-332</td>
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<tr>
<td>Business Administration 361</td>
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</tr>
<tr>
<td><strong>Non-US History</strong></td>
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</tr>
<tr>
<td>Logistics and Transportation 310</td>
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<tr>
<td><strong>Economics 321 or 323</strong></td>
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**Senior**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Logistics and Transportation 411</td>
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<tr>
<td>Logistics and Transportation 421</td>
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<td>Logistics and Transportation 441</td>
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<td><strong>Business Administration 400</strong></td>
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<tr>
<td><strong>Management 471</strong></td>
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<td><strong>Business Administration 371</strong></td>
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<tr>
<td>Business Law 301</td>
<td>3</td>
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<tr>
<td>Logistics and Transportation 460</td>
<td>3</td>
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<td>Management 401</td>
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**Total** 126

**Dual Concentration with Marketing**

**Requirements for the Bachelor of Science in Business Administration • Logistics and Transportation Major • Dual Concentration with Marketing**

**Junior**

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>Business Administration 331-332</td>
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<td>Business Administration 361</td>
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<td><strong>Non-US History</strong></td>
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<td>Marketing Electives</td>
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<td>Management 401</td>
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**Senior**

<table>
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<th>Hours</th>
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<td>Business Law 301</td>
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<td>Logistics and Transportation 460</td>
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<tr>
<td>Management 401</td>
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**Total** 126

**Dual Concentration with Operations Management**

**Requirements for the Bachelor of Science in Business Administration • Logistics and Transportation Major • Dual Concentration with Operations Management**

**Junior**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Business Administration 331-332</td>
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<td>Business Administration 341-342</td>
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<td>Business Administration 351-352</td>
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<tr>
<td>Business Administration 361</td>
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<tr>
<td><strong>Non-US History</strong></td>
<td>6</td>
</tr>
<tr>
<td>Logistics and Transportation 310</td>
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<td>Management 401</td>
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**Senior**

<table>
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<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Logistics and Transportation 411</td>
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<tr>
<td>Logistics and Transportation 421</td>
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<td>Logistics and Transportation 441</td>
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<td><strong>Management 441</strong></td>
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<td><strong>Management 410</strong></td>
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<td>Management 401</td>
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<tr>
<td>Elective</td>
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</tbody>
</table>

**Total** 126
Marketing education enables one to pursue varied career opportunities critical to organizations. Typically, a career in marketing begins in either consumer or industrial sales or retailing, which eventually may lead to management positions in any of several areas. For example, marketing professionals may hold positions in advertising, brand management, sales management, promotion management, marketing research, distribution, and other related areas.

Students interested in a marketing career will have a broad-based business education, which includes financial management, logistics and transportation, operations, human resources, business strategy, economics, and statistics. In addition to a broad array of courses in arts and sciences, marketing students will obtain a strong grounding in the social sciences to better understand the forces that shape consumer preferences.

**Collateral Option**

Requirements for the Bachelor of Science in Business Administration • Marketing Major • Collateral Option

<table>
<thead>
<tr>
<th>Freshman</th>
<th>Hours Credit</th>
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<tbody>
<tr>
<td>Business Administration 331-332</td>
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</tr>
<tr>
<td>1 English 101,102</td>
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<tr>
<td>2 Math 123-125 or 141-142</td>
<td>6 or 8</td>
</tr>
<tr>
<td>3 Intermediate Foreign Language</td>
<td>6</td>
</tr>
<tr>
<td>4 Natural Science</td>
<td>8</td>
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<tr>
<td>5 Social Science</td>
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<td>Business Administration 101</td>
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<td><strong>Sophomore</strong></td>
<td><strong>Hours Credit</strong></td>
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<td>Accounting 201,202</td>
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<td>Statistics 201</td>
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<td>Humanities (Literature)</td>
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<td>Oral Communications</td>
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</tr>
<tr>
<td>1 Non-US History</td>
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<td>Marketing 340</td>
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Social Science—Two courses from: Anthropology 120, 130, 320; Geography 101, 102, 320, 323; Political Science 101, 102, 107; Psychology 110, 117, 220, 360; Sociology 110, 117, 120, 127, 252, 250, 370.

Written Communications—One course from: English 255, 295, 355.

Ethics—one course from: Philosophy 242, 342, or 344.

Arts—One course from the courses listed below: Architecture 111, Art 191; Art History 172, 173, 183; Cinema Studies 281; Classics 232, 233; English 263, 281; Music History 115, 119, 120, 125, 330; Music Theory 100, Speech 280, Theatre 100, 220, 225; Women’s Studies 330.

Humanities—Three hours from courses listed below: African and African American Studies 233, Asian Languages 311, 312, 313, 314; Classics 253; Comparative Literature 202, 203; English 201, 202, 203, 211, 212, 231, 232, 233, 251, 252, 253, 254, 255, 351, or 297. the Honors Literature Courses; Any foreign language courses whose content is literature including foreign literature in English translation; Medieval Studies 261, 262; Religious Studies 312, 313; Russian 221, 222; Women’s Studies 210, 215.

Oral Communications—One course from: Speech 210, 240.


Collateral—9 hours choice of one area: Logistics & Transportation—LT 310; LT 411; LT 421; LT 441; Resource Management—ACC 321; FIN 435; FIN 455; Decision Analysis—IM 341, IM 342; IM 351. International Business—BA 371; MGT 471; ECON 321 or 323. General Management—MGT 321; MGT 421; MGT 431 or MGT 411. Human Resource Development—HRD 340, HRD 440; HRD 455. Data Mining—STAT 320; STAT 471; STAT 474. Process Thinking—STAT 320; STAT 365; STAT 471. Forecasting—STAT 320; STAT 471; STAT 475.

Marketing Electives—Choose three from MKT 452, 454, 456, 458.

Dual Concentration with International Business

Requirements for the Bachelor of Science in Business Administration • Marketing Major • Dual Concentration with International Business

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<tr>
<td>Marketing 350</td>
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Total 126

Dual Concentration with Logistics and Transportation

Requirements for the Bachelor of Science in Business Administration • Marketing Major • Dual Concentration with Logistics and Transportation

<table>
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<tr>
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<tr>
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<tr>
<td>Business Law 301</td>
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<tr>
<td>Logistics and Transportation 310</td>
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<tr>
<td>Electives</td>
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</table>

Total 126

Dual Concentration with Statistics

Requirements for the Bachelor of Science in Business Administration • Marketing Major • Dual Concentration with Statistics

<table>
<thead>
<tr>
<th>Junior</th>
<th>Hours</th>
<th>Credit</th>
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<tbody>
<tr>
<td>Business Administration 331-332</td>
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<tr>
<td>Business Administration 341-342</td>
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<tr>
<td>Finance 301</td>
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<tr>
<td>Business Administration 351-352</td>
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<td>Business Administration 361</td>
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<td>Business Law 301</td>
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<tr>
<td>Statistics Dual Concentration</td>
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<tr>
<td>Electives</td>
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</tr>
</tbody>
</table>

Total 126
Public Administration (Intercollegiate Program)

Public Administration is a joint program sponsored by the Department of Economics and the Department of Political Science. It is designed for students interested in public sector management, the formation of public policy, or the interface between the public and private sectors. The program combines general education in business principles with specific courses in government. Students choose electives to focus their interest or expertise.

Public Administration majors find careers in city management, tax administration, budget analysis, and in the functional areas of government such as education, health, and economic development. Opportunities exist at the federal, state, and local levels of governments. Many public administration majors pursue graduate-level education and training. Law schools and the Masters of Public Administration are two possible options.

Requirements for the Bachelor of Science in Business Administration • Public Administration Major

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<thead>
<tr>
<th>Grade Level</th>
<th>Hours</th>
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<tr>
<td>English 101,102</td>
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<td>Math 123-125 or 141-142</td>
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<tr>
<td>Sophomore</td>
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<tr>
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<tr>
<td>Written Communications</td>
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<tr>
<td>Ethics</td>
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<td>Political Science 340</td>
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<td>Economics 472</td>
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<tr>
<td>Business Law 301</td>
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</tr>
</tbody>
</table>

Department of Statistics

Professors
R.W. Mee (Head), Ph.D. Iowa State; H. Bozdogan (Toby and Brenda McKenzie Professor in Business), Ph.D. Illinois; F.M. Guess, Ph.D. Florida State; W.C. Parr, Ph.D. Southern Methodist

Associate Professors
M.G. Leitnake, Ph.D. Kentucky; R.V. Leon, Ph.D. Florida State; W.L. Seaver (Alma and Hal Reagan Scholar), Ph.D. Texas A&M; E. Walker, Ph.D. Virginia Tech; M.S. Younger, Ph.D. Virginia Tech

Assistant Professors
H. Bensmail, Ph.D. Paris VI; H. Kim, Ph.D. Wisconsin

Instructor
Charles M. Cwiek, M.S. Tennessee
### Statistics Major

The general perception of “statisticians” is most often associated with sporting events. The life a professional statistician, however, is much more varied and interesting than computing the average rushing yards per play. Actually, statistics is the science of learning from data, and all processes generate data. Statisticians determine how to collect and manage this necessary information; they interrogate the data and present the results in a clear fashion so that wise decisions can be made.

Statistics is used in various areas of business, industry, science, and government. The fields of opportunity for statisticians are numerous—e.g., economics, finance, market research, e-commerce, engineering, manufacturing, transportation, education, medicine, psychology, agriculture, and computer and social sciences.

There are two basic types of statisticians: applied and theoretical. The focus of the undergraduate program is on applied statistics. Applied statisticians help to improve processes and solve real-world problems. They may forecast economic or population growth, evaluate results of a new marketing program or the effectiveness of a new drug, identify quality control issues in manufacturing, or design experiments to help engineers and scientists determine the best design for a jet airplane.

Prospective statisticians must have a strong aptitude for mathematics, a solid computing background, and an earnest curiosity to explore the practical application of statistics. The skills students will learn as a statistics major at The University of Tennessee will enable them to understand and comprehend the power of statistical thinking—resulting in significant contributions towards solutions to a variety of important jobs. Well-paying jobs are available at the B.S., M.S., and Ph.D. levels.

### Collateral Option

**Requirements for the Bachelor of Science in Business Administration • Statistics Major • Collateral Option**

<table>
<thead>
<tr>
<th>Class</th>
<th>Hours</th>
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<tbody>
<tr>
<td><strong>Freshman</strong></td>
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<tr>
<td>English 101,102</td>
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<td>Management 401</td>
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<td>7-9</td>
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<tr>
<td><strong>Total</strong></td>
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</table>

*Must be completed by the end of the Freshman Year.

*Students who complete English 118, Honors English Composition, with a grade of A or B will complete their English Composition requirement by choosing English 102 or a sophomore literature course in the English Department. If the sophomore literature course appears on the list for the Humanities Literature requirement, the course may also be counted toward the Humanities requirement.*

*Statistics Electives—Any two courses from the High Demand List.*

**Collateral**—6 hours (choice of one area): Economics—ECON 311 or ECON 313; ECON 381; Finance—FIN 245; and one of FIN 435, 455, 475, 485; Decision Analysis—IM 341; IM 342; Logistics and Transportation—LT 310; LT 411; LT 493 (1 hour). Marketing—MKT 340; Marketing 350. Operations Management—MGT 341; and one of MGT 241 or MGT 441.


### Lecturer

J.L. Schmidhammer, Ph.D. Pittsburgh

### Adjunct Faculty

K.O. Bowman, Ph.D. Virginia Tech; T. Cooper, Ph.D. Tennessee; E.L. Frome, Ph.D. Emory; C. Hild, Ph.D. Tennessee; D.S. Husch, Ph.D. Tennessee; S.A. McGuire, Ph.D. Kansas State; G. Ostrouchov, Ph.D. Iowa State; D. Sanders, Ph.D. Tennessee

### Senior

- Statistics 471
- Statistics Electives
- Collateral
- Non-US History
- Business Law 301
- Management 401
- Electives

### Total

126
### Dual Concentration with Logistics and Transportation

**Requirements for the Bachelor of Science in Business Administration • Statistics Major • Dual Concentration with Logistics and Transportation**

<table>
<thead>
<tr>
<th>Junior</th>
<th>Hours Credit</th>
</tr>
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<tbody>
<tr>
<td>Business Administration 331-332</td>
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<td>Business Administration 341-342</td>
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<tr>
<td>Logistics and Transportation 310</td>
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<td>Statistics 320</td>
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<table>
<thead>
<tr>
<th>Senior</th>
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<tr>
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<td>Statistics 474 or 475</td>
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<tr>
<td>Logistics and Transportation 411</td>
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<td>Logistics and Transportation 421</td>
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<td>Logistics and Transportation 460</td>
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<td>Electives</td>
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**Total** 126

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### Dual Concentration with Marketing

**Requirements for the Bachelor of Science in Business Administration • Statistics Major • Dual Concentration with Marketing**

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<thead>
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<th>Junior</th>
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<tbody>
<tr>
<td>Business Administration 331-332</td>
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<td>Business Administration 341-342</td>
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<td>Marketing 340</td>
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<td>Business Law 301</td>
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<tr>
<td>Statistics Dual Concentration</td>
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</tbody>
</table>

| 13Statistics Dual Concentration | 3 |

| 14Marketing Electives | 4 |

**Senior**

| 12Non-US History | 6 |

| 13Statistics Dual Concentration | 3 |

| 14Marketing Electives | 4 |

| 13Statistics Dual Concentration | 9 |

| 15Management 401 | 3 |
| Marketing 460 | 2 |
| Electives | 6-8 |

**Total** 126

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**Statistics Dual Concentration courses**—Choose either STAT 320; STAT 330; STAT 471; STAT 474 or 475—OR—STAT 320; STAT 471; STAT 474; STAT 475.

**Marketing Electives**—Choose two from MKT 452, 454, 456, 458.
The College of Communication and Information fosters among students a sense of the legal and ethical responsibilities of access to information and the exercise of expression in a democratic society. Additionally, the College serves the professional goals of preparing students for careers in communication and information professions.

The College includes four schools: School of Advertising/Public Relations, School of Communication Studies, School of Information Sciences, and School of Journalism/Electronic Media. Four undergraduate majors are offered in advertising, electronic media, journalism, and speech communication. A concentration is offered in public relations. The five academic sequences have a core curriculum. This permits specialization at the junior and senior level.

Programs for which accrediting is available are fully accredited. The advertising, electronic media, journalism, public relations, and graduate programs are accredited by the Accrediting Council on Education in Journalism and Mass Communications. Information Sciences is accredited by the American Library Association and the National Council for Accreditation of Teacher Education.

Exchange programs with the Dutch School of Journalism and Communication, Utrecht, and the Danish School of Journalism, Arthus, offer students an opportunity for a European Semester. Tennessee students study European journalism and communication in the Netherlands or Denmark, but maintain their enrollment at The University of Tennessee and pay only room, board, and transportation costs. A similar exchange program with Escuela de Comunicacion Monica Herrera in Ecuador also exists.

The College, or one of its units, is a member of the Association of Schools of Journalism and Mass Communication; Association for Education in Journalism and Mass Communication; American Advertising Federation; Advertising Research Foundation; American Academy of Advertising; Broadcast Education Association; Tennessee Press Association; Society of Professional Journalists; Public Relations Society of America; National Communication Association; Southern States Communication Association; American Library Association; Association of Library and Information Sciences Education; Special Libraries Association; Tennessee Library Association.

College Core Areas

Students in the Schools of Advertising/Public Relations, Communication Studies, and Journalism/Electronic Media take the following core areas:

- Overview/Survey
- Writing
- Theory and Research
- Free Speech, Law and Ethics

Each unit designates a course (or courses) to fulfill the requirements.

Satisfactory/No Credit Option

No course that is part of the specific requirements of the College or of a student’s major department can be taken under this option. With the exception of field experience courses or practica, this option applies only to general electives.
Minors

Minors are offered in Electronic Media, Journalism, and Speech Communication. An interdisciplinary Communication and Information minor is also available.

Beginning Fall 2003, a 21-hour interdisciplinary minor in Communication and Information for non-majors is available.

Minor in Communication and Information for Non-Majors

Information Sciences 101 ................................................................. 3
Introductory Course (Communication 150, Speech Communication 100, or Communication 100) ............................. 3
6 hours from Advertising 250, Electronic Media 275, Information Sciences 202, Journalism 200, Public Relations 270, Speech Communication 210, 240, or 270 .................. 6
9 hours of 300-level or above courses from one or more of the following areas: Advertising, Electronic Media, Communication, Information Sciences, Journalism, Public Relations, or Speech Communication .................................................. 9

Total 21

NOTE: Students must complete at least one 200-level introductory course in a major area in order to take 300+ courses.

Progression Requirements

Entering and transfer students are first associated with the College as pre-majors. They may progress to a major in journalism, electronic media, advertising/public relations, or speech communication after the completion of at least 30 hours of prescribed coursework with a 2.5 cumulative GPA. Entering students who have completed the course requirements for the freshman year with a minimum 2.75 cumulative average in those courses will be considered for progression into advertising/public relations.

Transfer students from other universities must complete the first year curriculum and have a 2.75 cumulative GPA after their first semester at The University of Tennessee. Applicants must submit a completed department application, a statement of career goals, and an academic history. Until they progress to a major, students may not enroll in courses in the College numbered 300 or above without approval. Students who do not progress to a major by the time they have accrued 80 credit hours will be dismissed from the College. During their last 32 hours prior to graduation, all students must have been accepted as majors in the College.

Transfers within the University

With completion of 30 hours of prescribed coursework and a 2.5 cumulative GPA, students from other UT colleges are eligible to progress to a major. However, students pursuing a major in advertising/public relations must complete the freshman year course requirements with a 2.75 cumulative GPA to be considered for admission.

Requirements for Graduation

The Bachelor of Science degree in Communication is awarded to majors who complete a program of at least 124 hours prescribed under the Advertising, Electronic Media and Journalism requirements listed below. At least 80 of these hours must be taken in courses other than journalism and mass communication, with no fewer than 65 semester hours from the College of Arts and Sciences. At least 18 of the hours in the major must be taken at The University of Tennessee.

The Bachelor of Arts in Communication degree is awarded to Speech Communication majors who successfully complete the prescribed 124 hours of courses listed below.

Students must achieve a cumulative grade point average of at least 2.0 in all College courses used to fulfill graduation requirements.

School of ADVERTISING AND PUBLIC RELATIONS

Professors
R. Hovland, Ph.D. Illinois; M. Hoy, Ph.D. Oklahoma State; R. E. Taylor (Head), Ph.D. Illinois

Associate Professors
E. Haley, Ph.D. Georgia; M. Morrison, Ph.D. Georgia; J.L. Morrow, Ph.D. Toledo; C.L. White, Ph.D. Georgia

Assistant Professors
L.T. Fall, Ph.D. Michigan State; S. McMillan, Ph.D. Oregon; B.P. Riechert, Ph.D. Tennessee

ADVERTISING MAJOR

Requirements for the Bachelor of Science in Communication • Advertising Major

<table>
<thead>
<tr>
<th>Freshman</th>
<th>Hours</th>
<th>Credit</th>
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<tbody>
<tr>
<td>English 101, 102</td>
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<tr>
<td>Communication 100</td>
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<tr>
<td>1Foreign Language</td>
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<tr>
<td>Anthropology 130</td>
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<tr>
<td>2Natural Science</td>
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<td>Mathematics 119 or 123, 125</td>
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<td>History 241, 242</td>
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<td>1English Literature</td>
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<td>Statistics 201</td>
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<td>Political Science 101 or 102</td>
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<td>Journalism 280</td>
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<td>Business Administration 201</td>
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<td>Psychology 110</td>
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<tr>
<td>Advertising 340, 350</td>
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<td>Advertising 360</td>
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<td>Speech 240</td>
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<td>Marketing 300</td>
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<td>Management 300</td>
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<tr>
<td>4Arts and Sciences Electives</td>
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### Concentration in Public Relations

**Requirements for the Bachelor of Science in Communication • Advertising Major • Public Relations**

<table>
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<td>English 101, 102</td>
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<td></td>
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<tr>
<td></td>
<td>Math 119 or 125</td>
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<tr>
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<td>Public Relations 270</td>
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<tr>
<td></td>
<td>Journalism 200</td>
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<td>Journalism 280</td>
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<td>History 241, 242</td>
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<td>Statistics 201</td>
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<td>Business Administration 201</td>
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<td>Communication 400</td>
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<td>Speech Communication 440</td>
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<td></td>
<td>Public Relations 492</td>
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<td></td>
<td>Communication Elective</td>
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<td>3</td>
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<td></td>
<td>Marketing 300</td>
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<td></td>
<td>Social Science Electives</td>
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<td></td>
<td>Humanities Electives</td>
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<tr>
<td></td>
<td>General Electives</td>
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<td>2</td>
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</table>

**Total** 124

1. Six hours of intermediate foreign language is required.
2. Natural Science Electives are any two courses from: Astronomy 161, 162; Biology 101, 102; Botany 110, 120; Chemistry 100, 110 or 120, 130; Geography 131, 132; Geology 101, 102, or 103.
4. Any course in Arts and Sciences not currently required.
5. Any course not in the College of Communication and Information. Students minoring in Business should take Accounting 202 and Finance 301.

---

### SPEECH COMMUNICATION MAJOR

**Requirements for the Bachelor of Arts in Communication • Speech Communication Major**

<table>
<thead>
<tr>
<th>Class</th>
<th>Course</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Freshman</strong></td>
<td>Speech 100</td>
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</tr>
<tr>
<td></td>
<td>English 101, 102</td>
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<tr>
<td></td>
<td>Mathematics Elective</td>
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</tr>
<tr>
<td></td>
<td>Psychology 110</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Natural Science</td>
<td></td>
<td>8</td>
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<tr>
<td></td>
<td>Humanities Elective</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Computer Science 100 or 102</td>
<td></td>
<td>3-4</td>
</tr>
<tr>
<td><strong>Sophomore</strong></td>
<td>Speech 210 or 240</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>Speech 250 or 270</td>
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<td>3</td>
</tr>
<tr>
<td></td>
<td>History 241, 242</td>
<td></td>
<td>6</td>
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<tr>
<td></td>
<td>Math 115 or Statistics 201</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Foreign Language</td>
<td></td>
<td>6</td>
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<tr>
<td></td>
<td>Humanities Elective</td>
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<td>6</td>
</tr>
<tr>
<td></td>
<td>General Electives</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td><strong>Junior</strong></td>
<td>Speech 300, 310, 320 or 330</td>
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<tr>
<td></td>
<td>Speech 340</td>
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<tr>
<td></td>
<td>Speech 350</td>
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<td></td>
<td>Upper-level General Education Elective</td>
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<tr>
<td></td>
<td>College Elective</td>
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<tr>
<td></td>
<td>General Electives</td>
<td></td>
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<tr>
<td></td>
<td>Social Science Electives</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td><strong>Senior</strong></td>
<td>Speech 469 or Communication 400</td>
<td></td>
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<tr>
<td></td>
<td>Speech 499</td>
<td></td>
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<td></td>
<td>Speech Electives</td>
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<tr>
<td></td>
<td>Upper-level General Education Elective</td>
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<tr>
<td></td>
<td>General Electives</td>
<td></td>
<td>6</td>
</tr>
</tbody>
</table>

**Total** 124

1. Mathematics Electives: Mathematics 110, 119, 123, 125, 130, 141, 142, 151, or 152.
2. Natural Science Electives are any two courses from: Astronomy 161, 162; Biology 101, 102; Botany 110, 120; Chemistry 100, 110 or 120, 130; Geography 131, 132; Geology 101, 102, or 103.
3. Humanities Electives: Art; Classics; English; Foreign Language; Music; Theatre; Philosophy; Religious Studies.
Honors Program in Speech Communication

The School of Communication Studies offers an Honors program that provides an intensive educational experience designed to assure the participating student a superior and challenging undergraduate education. Speech Communication 107, the Honors version of Introduction to Speech Communication, is open to students with a 3.0 or higher cumulative GPA and to entering freshmen with a 3.5 or higher cumulative high school GPA and/or ACT composite score of 27 or better. Majors who are prospective juniors and who have a 3.0 or higher cumulative GPA and a 3.25 or higher cumulative GPA in the major are eligible to apply for admission to the Speech Communication Honors Program. Application forms are available in the department office.

To graduate with Honors, students must meet all requirements for the Speech Communication major and must complete 397 (Honors Seminar) during the junior year and 497-498 (Senior Honors Thesis) during the senior year. The GPA requirement for admission to the program must be maintained, and the grade in 498 must be B or higher.

Minor in Speech Communication

Speech Communication 100 ................................................................. 3
18 additional hours of Speech Communication Courses, at least
12 of which must be 300-level and above ........................................ 18

NOTE: Speech Communication 445, 491, 492, 493 may not be included toward requirements for the minor.

School of INFORMATION SCIENCES

E.S. Aversa, Director

Professors

E.S. Aversa, Ph.D. Drexel; C. Tenopir, Ph.D. Illinois

Associate Professors

D. Bilal, Ph.D. Florida State; J. M. Pemberton, Ph.D. Tennessee; R. Pollard, Ph.D. Brunel (UK); D. Raber, Ph.D. Indiana; W.C. Robinson, Ph.D. Illinois; P. Wang, Ph.D. Maryland; J. Watson, Ed.D. Vanderbilt; G. Whitney, Ph.D. Michigan

Assistant Professor

K. Albright, Ph.D. Tennessee

Established in 1971, the School of Information Sciences provides a graduate program for the preparation of librarians and other information professionals for work in all types of information environments. The program of study offers the Master of Science degree. In addition, the School of Information Sciences provides elective courses at the undergraduate level.

Undergraduate Program

The School of Information Sciences offers undergraduate courses that reflect the overall mission of the school: to educate people to live, work and flourish in an information society through excellence in teaching, research, and public service in library and information science.

The undergraduate courses support a heightened awareness of today’s information-rich environment. Increasingly, college graduates must understand the nature of information: sources, value, creation, organizing principles, transfer, and uses in society. Those who thrive in the information society must know how to identify and respond to their information needs. First as students, and then as professionals and citizens, graduates need to apply techniques and technologies in the search, retrieval, and evaluation of relevant information to meet their information needs. They must prepare to use a rapidly increasing array of information systems and technologies to seek and to manage information resources. These abilities, which add value to any field of study, constitute information survival skills in the twenty-first century. Graduates need to know when they can help themselves and when they should seek assistance from various information professionals.

The undergraduate courses are planned for the following groups of people:

• Students who wish to develop a better understanding of the role of information in society.
• Students whose academic major stresses understanding and use of information in society.
• Students whose academic major and/or minor requires significant use of research libraries.
• Students who are prospective candidates for the graduate program in library and information science.

Graduate Program

The School of Information Sciences offers a graduate professional degree program accredited by the American Library Association. Information concerning the graduate program is given in the Graduate Catalog.

School of JOURNALISM AND ELECTRONIC MEDIA

Professors

P.G. Ashdown, Ph.D. Bowling Green; B.J. Bates, Ph.D. Michigan; D. Bowles, Ph.D. Wisconsin; C.E. Caudill, Ph.D. North Carolina; M. Littmann (Chair of Excellence), Ph.D. Northwestern; B.A. Moore, Ph.D. Ohio; M.W. Singletary, Ph.D. Southern Illinois; N.R. Swan, Ph.D. Missouri; D.L. Teeter, Jr., Ph.D. Wisconsin

Associate Professors

D.L. Smith (Director), M.A. San Francisco State; D.J. Foley, M.S.J. Northwestern; M. Harmon, Ph.D. Ohio; R.B. Heller, M.A. Syracuse

Assistant Professors

B. Kaye, Ph.D. Florida State; C. Luther, Ph.D. Minnesota

Emeriti Faculty

J.A. Crook, Ph.D. Iowa State; H.H. Howard, Ph.D. Ohio; B. K. Leiter, Ph.D. Southern Illinois
**ELECTRONIC MEDIA MAJOR**

**Requirements for the Bachelor of Science in Communication • Electronic Media Major**

<table>
<thead>
<tr>
<th>Freshman</th>
<th>Hours</th>
<th>Credit</th>
</tr>
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<tbody>
<tr>
<td>English 101, 102</td>
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<td>6</td>
</tr>
<tr>
<td>Foreign Language</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>Communication 100 or Speech 100</td>
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<td>3</td>
</tr>
<tr>
<td>Psychology 110</td>
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<td>3</td>
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<tr>
<td>Natural Science</td>
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<td>8</td>
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<tr>
<td>Mathematics Electives</td>
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<td>6</td>
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<tr>
<td>Sophomore</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Political Science 101</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Electronic Media 275</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Electronic Media 310 or 320</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>History 241, 242</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>Economics 201</td>
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<td>3</td>
</tr>
<tr>
<td>English Literature</td>
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<td>Speech 210 or 240</td>
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</tr>
<tr>
<td>Computer Science 100</td>
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<tr>
<td>Junior</td>
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<tr>
<td>Electronic Media 450</td>
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<tr>
<td>Electronic Media Electives</td>
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<tr>
<td>Professional Electives</td>
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<tr>
<td>General Electives</td>
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<td>12</td>
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<tr>
<td>Senior</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Communication 400</td>
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<tr>
<td>Electronic Media 490</td>
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<td>Electronic Media 492</td>
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<td>Electronic Media Electives</td>
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<td>6</td>
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<tr>
<td>Professional Electives</td>
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<td>9</td>
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<tr>
<td>Communication Elective</td>
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<td>General Electives</td>
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<td>6</td>
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<tr>
<td><strong>Total</strong></td>
<td></td>
<td>124</td>
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</tbody>
</table>

1. Six hours of intermediate foreign language is required.
2. Natural Science Electives are any two courses from: Astronomy 161, 162; Biology 101, 102; Botany 110, 120; Chemistry 100, 110 or 120, 130; Geography 131, 132; Geology 101, 102, or 103.
6. NOTE: If courses in these areas are taken, at least some general elective hours must be used for courses given in the College of Arts and Sciences. Between general electives and professional electives, at least 14 hours must be taken from the College of Arts and Sciences.

**JOURNALISM MAJOR**

**Requirements for the Bachelor of Science in Communication • Journalism Major**

<table>
<thead>
<tr>
<th>Freshman</th>
<th>Hours</th>
<th>Credit</th>
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<td>English 101, 102</td>
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<td>Foreign Language</td>
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<td>Communication 100</td>
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<td>Psychology 110</td>
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<td>Math Elective</td>
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<tr>
<td>Math 115 or Statistics 201</td>
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</tr>
<tr>
<td>Sophomore</td>
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<td>3</td>
</tr>
<tr>
<td>Political Science 201</td>
<td></td>
<td>3</td>
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<tr>
<td>Journalism 203</td>
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<td>History 241, 242</td>
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</tr>
<tr>
<td>Foreign Language or General Electives</td>
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</tr>
<tr>
<td>Junior</td>
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<td>Communication 300</td>
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<td>Journalism 360</td>
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<tr>
<td>Accounting 201</td>
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<td>3</td>
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<tr>
<td>Humanities Elective</td>
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</tr>
<tr>
<td>Literature Electives</td>
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<tr>
<td>General Elective</td>
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<tr>
<td><strong>Senior</strong></td>
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<tr>
<td>Communication 400</td>
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<tr>
<td>Journalism 420</td>
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<td>Journalism 430</td>
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<tr>
<td>Journalism 460</td>
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<tr>
<td>Journalism 492</td>
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<tr>
<td>Professional Elective</td>
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<tr>
<td>Communication Elective</td>
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<tr>
<td>Social Science Elective</td>
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<tr>
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<td><strong>Total</strong></td>
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<td>124</td>
</tr>
</tbody>
</table>

1. Six hours of intermediate foreign language is required.
2. Natural Science Electives are any two courses from: Astronomy 161, 162; Biology 101, 102; Botany 110, 120; Chemistry 100, 110 or 120, 130; Geography 131, 132, Geology 101, 102, or 103.
4. Humanities Electives: Art; Classics; English; Foreign Language; Music; Theatre; Philosophy; Religious Studies.
6. Social Science Electives: Anthropology; Geography; Economics; History; Political Science; Psychology; Sociology; African and African-American Studies; Women’s Studies.
9. General Elective: Any course not in the College of Communication and Information.

**Minor in Electronic Media**

<table>
<thead>
<tr>
<th>Minor in Electronic Media</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication 100</td>
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</tr>
<tr>
<td>Electronic Media 275</td>
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<td>Electronic Media 310 or 320</td>
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</tr>
<tr>
<td>Electronic Media Electives (any 3 courses in department)</td>
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<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
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<td>18</td>
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</tbody>
</table>

**Minor in Journalism**

<table>
<thead>
<tr>
<th>Minor in Journalism</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Journalism 200</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Communication 400</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>12 hours in Journalism approved by</td>
<td></td>
<td></td>
</tr>
<tr>
<td>School of Journalin minor advisor</td>
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</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td>18</td>
</tr>
</tbody>
</table>
The College of Education, Health, and Human Sciences was created in 2002 from a merger of the former College of Education and the former College of Human Ecology. The merger of these two colleges, both with rich histories and exemplary records of achievement, resulted from a recognition of complementary institutional missions and a belief that the two colleges, as one, would become more effective in dealing with the complex challenges facing families, schools, and communities in the 21st Century.

The union of Education and Human Ecology to form the College of Education, Health, and Human Sciences honors past independent accomplishments but is now focused on an interdependent future. The College of Education, Health, and Human Sciences is a people-centered college that is intent on enhancing significant aspects of the human condition.

The College, with its disciplines located at the intersection of many of societies greatest challenges, is positioned to make a significant difference through its programs of study, research, and outreach. Recognizing that the strength of the College is greater than the sum of its parts, the College is subdivided into the following academic departments:

- Child and Family Studies
- Consumer Services Management
- Educational Administration and Policy Studies
- Educational Psychology and Counseling
- Health and Exercise Science
- Instructional Technology and Educational Studies
- Nutrition
- Sport and Leisure Studies
- Theory and Practice in Teacher Education

The College of Education, Health, and Human Sciences holds accreditation with the National Council for Accreditation of Teacher Education and the American Association of Family and Consumer Sciences. Among its accredited academic programs are the following: Mental Health Counseling and School Counseling by the Council for Accreditation of Counseling and Related Educational Programs; Education of the Deaf and Hard of Hearing by the Council on Education of the Deaf; Rehabilitation Counseling by the Council on Rehabilitation Education; School Psychology by the American Psychological Association and the National Association of School Psychologists; Sport Management (Graduate Level) by the NASSM/NASPE Sport Management Program Review Council; Dietetics by the American Dietetics Association; and Recreation and Tourism Management by the National Recreation and Park Association/American Association for Leisure and Recreation.

Overview to Undergraduate Programs of Study

Degrees

The College of Education, Health, and Human Sciences offers the following baccalaureate degrees:

- Bachelor of Science (B.S.) in Education
- Bachelor of Science (B.S.) in Human Ecology
- Bachelor of Science (B.S.) in Service Management

Majors/Concentrations

Students seeking the Bachelor of Science in Education may pursue majors and concentrations in the following:
• Special Education with concentrations in: Education of the Deaf and Hard of Hearing; Educational Interpreting; Modified and Comprehensive
• Exercise Science
• Sport Management

Students desiring the Bachelor of Science in Human Ecology may seek majors and concentrations in the following:
• Child Development with concentrations in: Child Development; Early Childhood Education (Teacher Licensure, Pre-K – Grade 4)
• Family Studies
• Recreation and Leisure Studies with concentrations in: Service Management; Therapeutic Recreation
• Community Health Education
• Nutrition

Students pursuing the B.S. in Service Management may seek majors and concentrations in the following:
• Hotel and Restaurant Administration with concentrations in: Hotel and Tourism Management; Restaurant and Foodservice Management
• Retail and Consumer Sciences

Minors

The academic departments within the College of Education, Health, and Human Sciences offer the following minors:
• Adolescent Health
• Child Development
• Community Health Education
• Dance
• Elementary Education
• Engineering Communication and Performance
• Family Studies
• Gerontology (Interdisciplinary)
• Middle-School Education
• Nutrition
• Retail and Consumer Sciences
• Secondary Education

1For Arts and Sciences students, only.
2For Engineering students, only.

Academic Policies and Procedures

Admission to the College of Education, Health, and Human Sciences

Entering freshmen and transfer freshmen students (i.e., with fewer than 30 credit hours and a minimum 2.0 GPA) are eligible for admission to the College of Education, Health, and Human Sciences. Transfer students, with 30 or more credit hours completed and a minimum 2.3 GPA are eligible for admission to the College.

Typically, students who are admitted to the College are expected to have attained the minimum GPA (ranging from 2.4-2.7) necessary for admission/progression to the major, concentration, or program by the completion of 59 credit hours or the completion of lower division coursework (i.e., 100- and 200-level). Normally, students who fail to progress by the completion of 59 credit hours will be ineligible to enroll in most upper division, specialized courses and, as a result, will significantly extend the time needed or negate their ability to earn a baccalaureate degree.

College advisors will assist students who fail to progress to identify other academic alternatives and, if necessary, to facilitate the transfer of those students to other academic units.

Progression to a Major, Concentration, or Program

Progression refers to the process during which a student demonstrates an aptitude to complete an academic major, concentration, or academic program. Typically, progression requirements include completion of prerequisite courses and attainment of a minimum grade point average. Some majors, concentrations, and programs also require applicants to attain certain minimum performance levels on standardized aptitude or achievement tests and a favorable recommendation from an interview panel. Academic majors, concentrations, and programs involving teaching or other interaction with children require applicants to submit to security checks. Upon successful progression (i.e., admission) to a major, concentration, or program, students must meet additional criteria in order to maintain good standing and to graduate or complete a program.

Complete progression requirements for each major or concentration are located in the following sections of this catalog. Progression requirements for the Teacher Education Program appear in the section entitled “Teacher Education at The University of Tennessee.”

Advising

The mission of the Student Services Center is to provide academic program planning and related services to students in the College of Education, Health, and Human Sciences. The Center maintains a full-time staff of academic advisors to respond to students’ concerns regarding progression to academic programs, courses of study, academic petitions (e.g., course substitutions, etc.), and referrals to other campus services. Students must meet with an advisor each semester before being cleared to register for the following semester classes.

Course Load

Undergraduate students may enroll in a maximum of 19 credit hours during fall and spring semesters and for no more than 12 credit hours during summer term. Appeals to exceed these maximums should be directed to the College’s Assistant to the Dean for Student Services or to the Director of Undergraduate Student Services; decisions to approve overloads will be based on a review of each student’s academic record but, typically, will not be granted to students with less than a 3.0 GPA.

Students who are granted permission by the University’s Vice Provost and Dean of Graduate Studies to earn graduate credits (see Seniors Eligible for Graduate Credit) prior to earning a bachelor’s degree may enroll in no more than 15 credit hours during either fall or spring semesters or a maximum of 12 credit hours during summer term.
Course Credit

With permission of the instructor, an undergraduate student who has a minimum 3.0 GPA may enroll in a 500-level course for undergraduate credit. Exclusions include courses numbered 500, 502, and independent or directed study courses for which there are appropriate undergraduate course alternatives.

With approval of the University’s Vice Provost and Dean of Graduate Studies, a senior-level student who needs fewer than 30 credit hours to complete requirements for a Bachelor’s degree and who has at least a 3.0 GPA may enroll in graduate courses for graduate credit, provided the combined total of courses does not exceed 15 credit hours per semester or 12 credit hours during summer term.

Grading

Students enrolled in the College of Education, Health, and Human Sciences may take courses graded on a Satisfactory/No Credit (S/NC) basis when letter grading (i.e., A-F) is not an option or in non-specified (i.e., free electives). Additionally, students must earn at least a “C” in major prefix courses and in any other course so identified by the major area faculty (see departmental sections for specific progression requirements for each major).

General Education Courses

Unless specific courses are identified in the required program of study, general education course requirements may be fulfilled accordingly:

- Natural Science — courses selected from Astronomy, Biology, Botany, Chemistry, Geography 131-132, Geology, or Physics.
- Social Science — courses chosen from Psychology, Sociology, Anthropology, Political Science, African and African-American Studies, Medieval Studies, Women’s Studies, University Studies, or Economics.
- Humanities — survey courses selected from Art History, Classics, Music History, Literature, Philosophy, Foreign Language (200 Level and above), Religious Studies, or Speech Communication.
- History — courses with a History prefix.

Approved Foreign Language, Multi-Cultural, and Integrative Electives

- Foreign Language—Greek (Classics)—any course offered by this department including 121, 122, 261, 262; Latin Classics)—any course offered by this department including 111, 112, 251, 252; French—any course offered by this department including 111, 112, 150, 211, 212, 217, 218; German—any course offered by this department including 101, 102, 180, 201, 202, 208; Italian—any course offered by this department including 111, 112, 211, 212; Portuguese—any course offered by this department including 111, 112, 211, 212; Asian Language/Asian Studies—any course offered by this department including 121, 122, 221, 222, 131, 132, 231, 232, 141, 142, 241, 242, 151, 152, 251, 252, 161, 162, 261, 262; Russian—any course offered by this department including 101, 102, 201, 202; Spanish—111, 112, 150, 211, 212, 217, 218.
- Multi-Cultural Studies—African and African-American Studies—any course offered by this department including 201, 202, 314, 315, 343, 352, 353, 364, 371, 373, 420, 421, 429, 431, 445, 450, 452, 461, 473, 480, 483; Asian Studies—any course offered by this department including 101, 102, 319, 471; Sport Studies 291; Dance 480, 490; Latin American Studies—any course offered by this department including 251, 252, 311, 312, 313, 319, 355, 360, 361, 401, 450, 455, 471, 472, 473, 474, 475, 479; Music 310, 350, 390; Women’s Studies 324, 383, 384, 422, 432, 483.
- Integrative Elective—University Studies: any University Studies course.

Teacher Education at The University of Tennessee

The College of Education, Health, and Human Sciences is the administrative base for the majority of the University’s preparation programs for educators; the College has oversight responsibilities for those programs attached to other academic units.

Admission to Teacher Education

A student desiring to become a teacher, regardless of college affiliation or academic major must be admitted to the Teacher Education Program. Admission to Teacher Education allows a student to enroll in upper division professional courses. Admission includes, but is not limited, to the following:

1. Academic Achievement: (a) minimum 2.7 cumulative GPA (except, Agriculture Education. 2.5) including transfer courses; (b) GPA based on completion of 75 credit hours (except, Elementary Education and Early Childhood Education 60 hours, Special Education and Agriculture Education 45 hours); (c) the following teaching areas require the completion of specific courses prior to admission: Mathematics Education- Mathematics 141-142, plus at least six hours 200-level Mathematics; Science Education—at least eight hours of laboratory natural science; Music Education–Music Theory 210 and at least one semester 200 level (applied) Music; English Education and Foreign Language Education—minimum nine hours 300-level in respective fields with minimum 3.0 GPA.

2. Standardized Test Performance: minimum 22 ACT (Enhanced Version)/21 ACT Composite Score, 1020 SAT (Revised Version)/920 Total Score, or State Board of Education determined passing scores on PRAXIS I (contact the College’s Student Services Center for current PRAXIS I scores).

3. Speech and Hearing Screening: Prospective teachers, except for deaf applicants to Deaf Education, must perform within normal limits on measures of speech and hearing proficiency or participate in remedial therapy through the University’s Hearing and Speech Center. Deaf applicants need to inform the College’s Office of Teacher Education Admissions.

4. Security Check: Criminal background checks will be performed to determine the appropriateness of each applicant’s request to enter teaching and, thus, to interact with children and youth.
Boards of Admission in Teacher Education

Applicants performing satisfactorily on the above criteria will be invited by the Office of Teacher Education Admissions to interview with a Board of Admission. Admission decisions will be based on the above admission criteria, as well as each applicant’s written application, oral expression, and expressed interest in teaching.

Admission is competitive and certain teaching fields have more qualified applicants than space available. Admission limitations are a function of the availability of faculty to serve students and to provide appropriate field placements. Interviews are conducted during fall and spring semesters; each board is comprised of content and pedagogy specialists, as well as a practitioner and an advanced student.

Maintaining Good Academic Standing in Teacher Education

To maintain good standing in the Teacher Education Program and to qualify for a degree and/or licensure as a teacher, students must perform adequately both in the university classroom and in the school(s). Students must maintain a minimum 2.7 Cum GPA, establish or maintain a minimum 2.5 GPA in their major, and maintain a minimum 2.8 GPA (course grade “C” or higher) required in professional courses.

Complete details on maintaining good standing and completing the teacher licensure program are available through the College of Education, Health, and Human Sciences web site (http://cehhs.utk.edu/main.html), the College’s School-Based Experiences Office, Claxton Complex, A 332, or teaching area faculty.

University-Wide Involvement in Teacher Education

Though faculty in the College of Education, Health, and Human Sciences assume primary responsibility for teaching students how to teach (i.e., pedagogy), the College of Arts and Sciences faculty have major responsibility for providing the broad, general education, background required of all teachers and for providing the specialized content knowledge needed by secondary teachers.

Information regarding specific teaching fields and educational specialties is available at the following campus locations:

- Agriculture Education—201 Morgan Hall
- Art Education—1715 Volunteer Boulevard, 213 Art & Architecture Building
- Music Education—1741 Volunteer Boulevard, 211A Music Building
- School Counseling—A525 Claxton Complex
- School Psychology—A525 Claxton Complex
- Speech and Hearing Education—457 South Stadium Hall
- Social Work—221 Henson Hall

Inquiries regarding Business Education, Family and Consumer Sciences Education, Marketing Education, and Technology Education are directed to 310 Jessie Harris Building.

Information regarding Early Childhood Education, Elementary Education, Secondary Education, and Special Education is available through the College of Education, Health, and Human Sciences’ Student Services Center, A332 Claxton Complex.

Title II, HEA Compliance Report

Per requirements of Title II of the Higher Education Act, the College of Education, Health, and Human Sciences reports the following pass rates on State required licensure tests for the 2001-2002 Academic Year: The University of Tennessee 95%; State of Tennessee 92%.

Department of CHILD AND FAMILY STUDIES

http://cfs.he.utk.edu/

Professors

G. Peterson (Head), Ph.D. Brigham Young; B. Barber, Ph.D. Brigham Young; P. Blanton, Ed.D. Tennessee; C. Buehler, Ph.D. Minnesota; J. Cunningham, Ph.D. Michigan State; G. Fox, Ph.D. Michigan; J. Moran, Ph.D. Oklahoma State; V. Nordquist, Ph.D. Tennessee; S. Twardosz, Ph.D. Kansas

Associate Professors

J. Allen, Ph.D. Purdue; J. Malia, Ph.D. Iowa State; D. Smith, Ph.D. Oklahoma State; D. Tegano, Ph.D. Virginia Tech

Assistant Professors

D. Brandon, Ph.D. Tennessee; M. Devereaux, Ph.D. Tennessee; M. Moran, Ph.D. New Hampshire; T. Wass, Ph.D. Denver

The Department of Child and Family Studies has a dual mission for preparing both competent professionals and effective family members through an emphasis on the psychosocial aspects of challenges facing children and families in today’s complex society.

Through a combination of classroom instruction and field-based experience, the department prepares undergraduate students for positions in diverse occupations and for advanced education. The department offers a major that could lead to teacher licensure or other careers focused on children and/or families.

Within the curricula, undergraduate majors meet objectives: to enhance their foundation for learning; to obtain a broad, general education; and for most, to prepare to enter a specialized career field within the profession or graduate study. This course of study has been constructed to provide a series of educational experiences from broad survey courses to advanced courses of specialized knowledge and from early applied experiences, such as observation and participation, to a professional experience in work settings.

CHILD DEVELOPMENT MAJOR

The major is designed to meet the educational needs of undergraduates whose career plans focus on professional settings that foster human development. The major has two concentrations. The focus of the Child Development concentration is on gaining a scientifically-based understanding of child and youth development within the context of families and other social environments.

The concentration provides preparation for working in a variety of social and community agencies that serve children and youth. Child Development is a good choice for students who are planning to pursue graduate work in child or family studies. The Early Childhood Education Teacher Licensure
concentration is an applied aspect of child development that seeks to prepare students for careers as educators and child care-providers for young children. The key focus is fostering the development of young children within the context of high quality learning environments. The specific purpose of the ECE concentration is to provide State of Tennessee Teacher Licensure.

**Child Development Concentration**

**Progression Requirements**

**STEP 1:**
1. Complete Child and Family Studies 102, 110, 211, and for admission to Child and Family Studies 350. (Note: Child and Family Studies 102 may be taken as a co-requisite to Child and Family Studies 350).
2. Attain a cumulative GPA of at least 2.3/4.0 (transfer hours included) for admission to Child and Family Studies 350.
3. Complete at least 30 semester hours.
4. Attain a minimum grade of C in all Child and Family Studies courses.

**STEP 2:**
2. Each applicant will be screened by the University’s Conduct Office. Applicants who have established in the past, or established during the program, records of inappropriate conduct will be evaluated by Child and Family Studies faculty and Student Conduct Office staff.
3. Complete a Self-disclosure Form which allows the University’s personnel office to conduct a background check; a negative report on the background will be evaluated by the Child Area faculty in conjunction with the Department head and Dean.

For progression into Child and Family Studies 470/Child and Family Studies 471, students must meet the following criteria.

**STEP 3:**
1. Complete Child and Family Studies 351 with a minimum of C in all Child and Family Studies courses.
2. Complete at least 90 hours (senior standing).
3. Earn and maintain a cumulative GPA of at least 2.3/4.0
4. Update Student Information Form and Self-disclosure Form concerning conduct and background information prior to student teaching or practicum experiences.
5. Attain successful participation experiences and satisfactory evaluations in Child and Family Studies 350 and 351.
6. Enroll in Child and Family Studies 470/Child and Family Studies 471 (priority for summer school teaching is given to students enrolled in the Early Childhood Education and Joint Certification Teacher Licensure programs and is limited to availability).

**Requirements for the Bachelor of Science in Human Ecology • Child Development Concentration**

<table>
<thead>
<tr>
<th>Freshman</th>
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<tbody>
<tr>
<td>Child and Family Studies 110, 211</td>
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<tr>
<td>English 101, 102</td>
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<tr>
<td>Humanities Elective</td>
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</tr>
<tr>
<td>Mathematics 110, 115</td>
<td>6</td>
</tr>
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<td>Natural Science Elective</td>
<td>6-8</td>
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<td>Psychology 110</td>
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<td>Child and Family Studies 213, 220, 350</td>
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<tr>
<td>History Elective</td>
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<td>Humanities Elective</td>
<td>3</td>
</tr>
<tr>
<td>Child and Family Studies 102</td>
<td>3</td>
</tr>
<tr>
<td>Nutrition 100</td>
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<tr>
<td>Psychology 210</td>
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<tr>
<td>Speech 220</td>
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<tbody>
<tr>
<td>Anthropology 320</td>
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<td>Child and Family Studies 351,352, 420</td>
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<td>Foreign Language Elective</td>
<td>3</td>
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<tr>
<td>Foreign Language Elective</td>
<td>3</td>
</tr>
<tr>
<td>Human Ecology 310</td>
<td>3</td>
</tr>
<tr>
<td>Human Ecology 410</td>
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<td>Information Sciences 330</td>
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<tr>
<td>Psychology 310</td>
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<th>Senior</th>
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<td>Child and Family Studies 455, 471, 481</td>
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<td>Psychology 330</td>
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<tr>
<td>Restricted Elective</td>
<td>6</td>
</tr>
<tr>
<td>Elective</td>
<td>6-8</td>
</tr>
</tbody>
</table>

**Total** 124

1. Courses are to be chosen from two of the following categories: literature; speech or oral interpretation; art or music appreciation; philosophy or religious studies.
2. One of the following sequences is to be chosen: Astronomy 151 and 152, Biology 101 and 102, Botany 110 and 120, Chemistry 100 and 110, Chemistry 120 and 130, Geography 131 and 132, Geology 101 and 102, Physics 101 and 102.
3. One semester of American History and one semester of another history-prefix course.
4. Must be intermediate at the 200 level or above.
5. Child Development Restricted Electives: Students must select 6 semester hours of restricted electives. See advisor or Advising Center for list of recommended and restricted electives.
6. At least 48 hours in 300-400 level courses are required.

**Early Childhood Education Teacher Licensure (Pre-K—Grade 4) Concentration**

Students interested in meeting the requirements for Early Childhood Education licensure (Pre-K—Grade 4) in the State of Tennessee are encouraged to determine their interest in licensure very early in their college careers and to seek appropriate advising. Teacher licensure is granted upon successful completion of the fifth year (Professional Year). Twelve additional hours may be taken to complete the Master's degree.

**Progression Requirements**

**STEP 1:**
1. Attain a cumulative GPA of at least 2.3/4.0 (transfer hours included) for admission to Child and Family Studies 350.

**STEP 2:**
1. Complete at least 60 semester hours.
2. Attain a minimum grade of C in all required Child and Family Studies courses and Education courses.
3. Earn a cumulative GPA of at least 2.7/4.0 (transfer hours included) for admission to Teacher Education.
4. Successfully complete an interview, which includes evaluation of written and oral communication skills, with the Early Childhood Education Review Panel or the Board of Admissions in the College of Education, Health, and Human Sciences during the first methods course Child and Family Studies 350.

For progression into Student Teaching, students must meet the following criteria:

**STEP 3:**
1. Progress into the major.
2. Complete Child and Family Studies 110, 211, 350, and 351.
3. Complete at least 90 hours (senior standing).
5. Attain a minimum of C in all required Child and Family Studies courses and Education courses.
6. Earn and maintain a cumulative GPA of at least 2.7/4.0.
7. Attain successful participation experiences and satisfactory evaluations in CFA 350 and 351.

Note: Students are expected to exhibit written and oral communication skills appropriate to the program. If these skills are not exhibited, students may choose to participate in remedial activities through the University Hearing and Speech Center and/or the University’s Writing Center, or may be referred by a course instructor.

**Requirements for the Bachelor of Science in Human Ecology • Child Development Major • Early Childhood Education Teacher Licensure (Pre-K—Grade 4) Concentration**

<table>
<thead>
<tr>
<th>Freshman</th>
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<tbody>
<tr>
<td>English 101, 102</td>
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<td>Child and Family Studies 110</td>
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<td>Child and Family Studies 213</td>
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<tr>
<td>Child and Family Studies 210</td>
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</tr>
<tr>
<td>Mathematics 110 or 201</td>
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<tr>
<td>Mathematics 115 or 202</td>
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<td>Child and Family Studies 350</td>
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<tr>
<td>Child and Family Studies 351</td>
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<tr>
<td>Elective</td>
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</tr>
<tr>
<td>History Elective</td>
<td>3</td>
</tr>
<tr>
<td>Natural Science Electives</td>
<td>8</td>
</tr>
<tr>
<td>Social Science Electives</td>
<td>6</td>
</tr>
<tr>
<td><strong>Junior</strong></td>
<td><strong>11</strong></td>
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<tr>
<td>Child and Family Studies 352</td>
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<tr>
<td>Electives</td>
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<tr>
<td>Foreign Language Electives</td>
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<tr>
<td>Health 310</td>
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<tr>
<td>Human Ecology 410</td>
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<td>Humanities Electives</td>
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<td>Information Sciences 330</td>
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**Senior**
- Child and Family Studies 471 ................................................ 12
- Cultural Studies in Education 400 ............................................. 2
- Educational Psychology 401 ...................................................... 2
- Special Education 402 ............................................................... 2
- Instructional Technology 486 ..................................................... 3
- Child and Family Studies 422 .................................................... 6
- Early Childhood Education 445 ................................................ 3

**Total** 126

**Minor in Child Development**

<table>
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<th>Freshman</th>
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<tr>
<td>Child and Family Studies 210, 211, 213</td>
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<td>Child and Family Studies 320, 352</td>
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<td>Child and Family Studies Elective</td>
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</table>

**Total** 18

**FAMILY STUDIES MAJOR**

The Family Studies major is designed for students whose educational and career goals are focused on studying and working with individuals and families within educational programs and community services. The major is designed to accommodate special interests or strengths of students and allows for flexibility and individualization. All students take a basic core with individualization taking place within the pods selected by the student including an internship pod. The student may design a program in consultation with an advisor, making selections from the recommended pods, channeling the course study in a particular direction so that all students graduating with a Family Studies major will have depth in family knowledge, a broad integrative perspective and means for application. Graduates of the Family Studies major who have completed Child and Family Studies courses 210, 220, 240, 345, 360, 405, 420, 430, 440 and 480 as well as Human Ecology 410, are eligible to make application for Full or Provisional designation as a Certified Family Life Educator (CFLE) through the National Council on Family Relations.

A pod is basically coursework focusing on a concept that relates to the study of the family. Coursework to support the concepts comes from many areas across the university. Pods are referred to as restricted electives within the curriculum description and will constitute a minimum of 36 hours for each student’s program, of which 9 credit hours are earned through enrollment in the Interactive and Conflict Resolution Skills pod and 9 credit hours are earned through enrollment in the Internship pod in the Senior year. Choices for the two remaining pods are: Adulthood and Aging, Families and Youth at Risk, Family and Community Services, Health and Wellness, Human Development, Instructional Programs, Life Management, Management of Human Service Agencies, Mass Media and Writing, Multi-Cultural, Public Policy, Research, and Women and Families.
Progression Requirements—Family Studies Major

1. Complete at least 15 semester hours at The University of Tennessee.
2. Complete Child and Family Studies 205 with a satisfactory grade. Application for progression while enrolled in Child and Family Studies 205 is premature.
3. Attain a minimum grade of C in all Child and Family Studies and Human Ecology courses.
4. Attain and maintain a cumulative GPA of 2.5/4.0 (transfer hours not included).

For progression into the Family Studies Internship, students must meet the following criteria:
1. Progress into the major.
2. Complete courses in Family Studies Core.
3. Complete at least 90 hours (senior standing).
5. Complete Child and Family Studies 405, HS 380 and one additional 3 hour course in the Interpersonal and Conflict Resolutions Skills pod.
6. Attain a minimum of C in all Child and Family Studies courses and Human Ecology courses.
7. Earn and maintain a GPA of 2.5/4.0.

Requirements for the Bachelor of Science in Human Ecology • Family Studies Major

**Freshman**

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<th>Course</th>
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<td>Social Science Electives</td>
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**Sophomore**

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**Junior**

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<tr>
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<td>Child and Family Studies 345, 360</td>
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<td>Human Services 380</td>
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**Senior**

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<th>Course</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advanced Social Science Electives</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Child and Family Studies 405, 420,430,440</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>Electives</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>Human Ecology 410</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>

Total: 131-137

1. Courses are to be selected from at least two of the following categories: literature, art, appreciation, music, appreciation, philosophy, or religious studies.
2. Students must select one of the following sequences: Sociology 110-120 or Psychology 110-120.
3. Child and Family Studies 210 requirement waived if the student selects the Human Development Pod; replace with 3 hours of general electives.
4. Students must select one of the following sequences: Astronomy 151-152, Biology 101-102, Botany 110-120, Chemistry 120-130, Geography 101-102, Geology 101-102, Physics 101-102.
5. 36 hours must be chosen, in consultation with a faculty advisor, from a list of courses meeting departmental requirements for restricted electives given below.
6. Students must select a total of 6 credit hours from the following courses: Political Science 311, 320, 330, 350, 365, 370, 374, or 461; Psychology 330, 370, 400, 415, 424, 430, 434, 440, 470; Sociology 340, 350, 351, 352, 375; Sociology 370/Psychology 360.
7. At least 48 hours in 300-400 level courses are required.
8. 6-10 credit hours of a sequence of modern foreign language study. This requirement also may be met by Educational Interpreting 223-226 (American Sign Language I-II) or Latin 111-112.

Restricted Electives

Restricted electives are grouped in pods and students must complete 4 pods of 9 hours each. If 18 hours are taken from one pod, it may count for 2 of the required pods. A course may be counted in one pod only.

- **Adulthood and Aging:** Child and Family Studies 312; Health 406, 465; Nursing 400.
- **Families and Youth at Risk:** Child and Family Studies 455; Health 406, 430, 435; Educational Psychology 432; Psychology 330; Sociology 340, 351; Social Work 200.
- **Family and Community Services:** Counselor Education 410; Child and Family Studies 352, 405; Human Services 330, 380; Planning 446; Educational Psychology 431; Social Work 200, 250; Sociology 110.
- **Family Studies Internship:** Requires a 2.5 GPA, completion of the Conflict Resolution Pod, progression into family studies major, and application for/acceptance into internship placement.
- **Health and Wellness:** Health 330, 375, 400, 405, 425, 430, 435; Nursing 202, 314; Psychology 430; Public Health 300, 305; Sociology 414; Speech 425; University Studies 311.
- **Human Development:** Child and Family Studies 211, 213, 312; Counselor Education 212; Psychology 310, 320, 360, 470.
- **Instructional Programs:** Agricultural and Extension Education 411; Child and Family Studies 320; Health 426; Educational Psychology 210; Speech 440.
- **Interpersonal and Conflict Resolution Skills:** Child and Family Studies 405 and Human Services 380 required; Psychology 424, Speech/Sociology 220; Speech 310, 320, 420.
- **Life Management:** Hotel and Restaurant Administration 101; Nutrition 100, 302; Retail and Consumer Sciences 341, 350; Materials Science and Engineering 220.
- **Management of Human Service Organizations:** Political Science 340, 440; Accounting 201, 202; Social Work 250; Business Administration 201; Management 300; Marketing 300; Statistics 201.
- **Mass Media and Writing:** Communication 100; English 360, 455; Journalism 200, 201, 310, 414; Public Relations 270.
- **Multi-Cultural:** African and African-American Studies 201, 202, 429, 473, 480, 483; Anthropology 130, 312, 320; Sociology 343.
- **Public Policy:** Journalism 201; Planning 446; Political Science 311, 312, 340; Public Relations 270; Women’s Studies 340.
- **Research:** Anthropology 431; Child and Family Studies 481; Sociology 331; Statistics 201.
- **Women and Families:** African American Studies 483; Counselor Education 410; Health 425; History 453; Religion 320; Sociology 375; Women’s Studies 220, 340, 360, 434.

Minor in Family Studies

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Child and Family Studies 220, 210 or 240</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>12 upper-division hours from among Child and Family Studies 312, 320, 345, 360, 420, or 430</td>
<td>12</td>
<td>12</td>
</tr>
</tbody>
</table>

Total: 18

Department of CONSUMER SERVICES MANAGEMENT

**Professors**

N. Fair (Head), Ph.D. NC State; C. Costello, Ph.D. Tennessee; A. Fairhurst, Ph.D. Oklahoma State; L. Jolly, Ph.D. Oklahoma State

**Associate Professors**

D. Wise, Ph.D. Texas A&M

**Assistant Professors**

R. Chen, Ph.D. NC State; C. Pfaffenberg, Ph.D. Tennessee; J. Salazar, Ph.D. Auburn; A. Young, Ph.D. Minnesota

**Internship Coordinators**

D. Aaser, HRA, M.S. University of Wisconsin-Stout; L. Simpson, RCS, M.S. Tennessee

**Lecturer**

C. Dixon, Ph.D., Oklahoma State
The mission of the Department of Consumer Services Management is to provide nationally and internationally recognized interdisciplinary programs that prepare professionals and serve organizations in the public and private sectors through teaching, research, and technology transfer.

**HOTEL AND RESTAURANT ADMINISTRATION MAJOR**

The Hotel and Restaurant Administration concentrations focus on meeting the middle- and upper-level management needs of the food and lodging industry. It is a program that assists students in getting the breadth of knowledge, responsibility and creativity to meet the changing environment of complex management problems in industry. A business minor is built into the degree requirements.

The Hotel and Restaurant Administration concentrations require extensive field experience. The curriculum provides a strong base in management and practical application of these skills. The general education electives help students to sharpen their analytical, conceptual, and communications abilities. Graduates may start as management trainees in restaurants, foodservice, hotels, support industries, or in tourism operations with subsequent upward mobility into management positions.

**Progression Requirements**

Students should apply for progression into their chosen concentration after completing Retail and Consumer Sciences 210, Hotel and Restaurant Administration 210 or Hotel and Restaurant Administration 211 and prior to entering Retail and Consumer Sciences/Hotel and Restaurant Administration 390. Applications for progression are available in the department office.

For progression into each concentration, students must meet the following criteria:

1. Cumulative grade point average 2.3 or greater for at least 30 semester hours.
2. Grade of C or better in all Retail and Consumer Sciences and/or Hotel and Restaurant Administration prefix courses, English 101, 102, Mathematics 119 or 123, 125.
3. Complete 300 post-secondary school hours of industry related work for the chosen major. A list of appropriate work experiences is available in the department office.

For graduation, students must earn a grade of C or better in all Retail and Consumer Sciences and/or Hotel and Restaurant Administration courses.

**Requirements for the Bachelor of Science in Service Management • Hotel and Restaurant Administration Major • Hotel and Tourism Management Concentration**

<table>
<thead>
<tr>
<th>Freshman</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>English 101, 102</td>
<td>6</td>
</tr>
<tr>
<td>History Elective</td>
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</tr>
<tr>
<td>Natural Science Elective</td>
<td>3</td>
</tr>
<tr>
<td>Mathematics 119, 123, 125</td>
<td>6</td>
</tr>
<tr>
<td>Humanities Electives</td>
<td>6</td>
</tr>
<tr>
<td>Hotel and Restaurant Administration 119</td>
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<table>
<thead>
<tr>
<th>Sophomore</th>
<th>Hours Credit</th>
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</thead>
<tbody>
<tr>
<td>Accounting 201, 202</td>
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<tr>
<td>History Elective</td>
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<tr>
<td>Psychology 110</td>
<td>3</td>
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<tr>
<td>Business Administration 201</td>
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<table>
<thead>
<tr>
<th>Junior</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
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<td>History Elective</td>
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<td>Marketing 300</td>
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<td>Finance 301</td>
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<tr>
<td>Speech 240</td>
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<tr>
<td>Hotel and Restaurant Administration 311</td>
<td>3</td>
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<tr>
<td>Hotel and Restaurant Administration 312</td>
<td>3</td>
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<tr>
<td>Hotel and Restaurant Administration 326</td>
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</tr>
<tr>
<td>Hotel and Restaurant Administration 341</td>
<td>1</td>
</tr>
<tr>
<td>Hotel and Restaurant Administration 390</td>
<td>3</td>
</tr>
<tr>
<td>Hotel and Restaurant Administration 420</td>
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</tbody>
</table>

| Total Hours Credit           | 128-130      |

1 Hotel and Restaurant Administration Electives—Select 4 hours from the following: 224, 435, 423, 455; Human Ecology 310.

**Requirements for the Bachelor of Science in Service Management • Hotel and Restaurant Administration Major • Hotel and Restaurant Administration Concentration**

<table>
<thead>
<tr>
<th>Freshman</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hotel and Restaurant Administration 102</td>
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</tr>
<tr>
<td>Hotel and Restaurant Administration 210</td>
<td>3</td>
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<tr>
<td>Hotel and Restaurant Administration 211</td>
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<tr>
<td>Hotel and Restaurant Administration 224</td>
<td>3</td>
</tr>
<tr>
<td>Hotel and Restaurant Administration 311</td>
<td>3</td>
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</table>

<table>
<thead>
<tr>
<th>Junior</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marketing 300</td>
<td>3</td>
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<tr>
<td>Management 300</td>
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<tr>
<td>Speech 240</td>
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<tr>
<td>Hotel and Restaurant Administration 311</td>
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<td>Hotel and Restaurant Administration 326</td>
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</tr>
<tr>
<td>Hotel and Restaurant Administration 341</td>
<td>1</td>
</tr>
<tr>
<td>Hotel and Restaurant Administration 420</td>
<td>6</td>
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</tbody>
</table>
RETAIL AND CONSUMER SCIENCES MAJOR

Through a combination of classroom instruction and field based experience, students prepare for entry-level positions in diverse occupations and for advanced education. The Retail and Consumer Sciences concentration, is one of the largest programs of this type in the Southeast. Retailing is one of the fastest growing segments of our economy, and opportunities for employment will continue to be excellent through the 21st Century.

Retail and Consumer Sciences provides students with knowledge of the retailing industry and the principles and theories involved in managing personnel and merchandising goods for the consumer. A business minor is built into the degree requirements. The progressive direction that this program takes provides graduates with excellent management opportunities in the retail sector.

This program requires field study experiences where students are guided by faculty in the selection of locations for on-the-job experiences related to their career area as a part of their educational program. Professional contacts made in field study experiences often lead to opportunities for career placement upon graduation.

Progression Requirements

Students should apply for progression into the major after completing Retail and Consumer Sciences 210, Hotel and Restaurant Administration 210 or Hotel and Restaurant Administration 211 and prior to entering Retail and Consumer Sciences or Hotel and Restaurant Administration 390. Applications for progression are available in the department office.

For progression into the major, students must meet the following criteria:

1. Cumulative grade point average 2.3 or greater for at least 30 semester hours.
2. Grade of C or better in all Retail and Consumer Sciences and/or Hotel and Restaurant Administration prefix courses, English 101, 102, Mathematics 119 or 123, 125.
3. Complete 300 post-secondary school hours of industry related work for the chosen major. A list of appropriate work experiences is available in the department office.

For graduation, students must earn a grade of C or better in all Retail and Consumer Sciences and/or Hotel and Restaurant Administration courses.

Requirements for the Bachelor of Science in Service Management • Retail and Consumer Sciences Major

<table>
<thead>
<tr>
<th>Freshman Hours Credit</th>
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<tbody>
<tr>
<td>English 101,102 ................................................................. 6</td>
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<tr>
<td>Natural Science Electives ............................................... 6-8</td>
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<tr>
<td>Mathematics 119, or 123, and 125 ..................................... 6</td>
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<tr>
<td>Humanities Electives .......................................................... 6</td>
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<td>History Elective ................................................................. 3</td>
</tr>
<tr>
<td>Retail and Consumer Sciences 119 ........................................ 3</td>
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<tr>
<td>Elective ................................................................. 3</td>
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<table>
<thead>
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<th>Sophomore</th>
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<tbody>
<tr>
<td>History Elective ................................................................. 3</td>
</tr>
<tr>
<td>Accounting 201, 202 ............................................................... 5</td>
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<tr>
<td>Statistics 201 ................................................................. 3</td>
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<td>Economics 201 ................................................................. 4</td>
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<tr>
<td>Psychology 110 ................................................................. 4</td>
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<td>Business Administration 201 ................................................ 4</td>
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<tr>
<td>Retail and Consumer Sciences 102 ........................................... 3</td>
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<td>Retail and Consumer Sciences 210, 341 ........................................ 6</td>
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<table>
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<tbody>
<tr>
<td>Marketing 300 ................................................................. 3</td>
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<td>Management 300 ................................................................. 3</td>
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<tr>
<td>Finance 301 ................................................................. 3</td>
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<tr>
<td>Speech 240 ................................................................. 3</td>
</tr>
<tr>
<td>Retail and Consumer Sciences 310, 311, 323, 376, 390 .................. 16</td>
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<tr>
<td>Retail and Consumer Sciences Elective .................................. 3</td>
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<tr>
<td>Retail and Consumer Sciences 422 ........................................... 6</td>
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<thead>
<tr>
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<tbody>
<tr>
<td>Human Ecology 410 ................................................................. 3</td>
</tr>
<tr>
<td>Hotel and Consumer Sciences 410, 425 .................................. 6</td>
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<td>Hotel and Consumer Sciences Electives .................................. 3</td>
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<td>Elective ................................................................. 3</td>
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<tr>
<td>Retail and Consumer Sciences 492 and 485 or Hotel and Consumer Sciences Electives .................................. 12</td>
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<table>
<thead>
<tr>
<th>Total</th>
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</thead>
<tbody>
<tr>
<td>128-131</td>
</tr>
</tbody>
</table>

Note: Some of these courses have prerequisites.

Minor in Retail and Consumer Sciences

Retail and Consumer Sciences 119, 210, 376, 310, 376 ............................. 13
Select 2 of the following:

| Retail and Consumer Sciences 411, 412, 415, 493, 497 ............................. 6 |

<table>
<thead>
<tr>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>19</td>
</tr>
</tbody>
</table>

Note: Some of these courses have prerequisites.

Department of Education, Administration and Policy Studies

Professors

Associate Professors
V. Anfara, Ph.D. New Orleans; C. Norris, Ed.D. Tennessee

Assistant Professor
F. Patterson, Ed.D. Tennessee

Graduate degree only.
Minor in Engineering Communication and Performance

The Engineering Communication and Performance minor is available for Engineering students desiring additional training and certification in team facilitation and organizational communication. (See College of Engineering—Engineering Fundamentals section of this catalog.)

**Required Courses**
- Counseling Education 206 .................................................. 3
- Counseling Education 306 .................................................. 3
- Counseling Education 406 .................................................. 3

Select two of the following courses:
- Psychology 360 ................................................................. 3
- Management 440 ............................................................... 3
- Speech Communication 420 ............................................... 3
- Speech Communication 440 ............................................... 3

**Total** 15

**Department of HEALTH AND EXERCISE SCIENCE**

**Professors**
- E. Howley (Interim Head), Ph.D. Wisconsin; D. Bassett, Jr., Ph.D. Wisconsin; B. Clarke, Ph.D. Virginia Tech; J. Gorski, Dr.P.H. UCLA; C. Hamilton, Dr.P.H. Oklahoma; R. Kirk, H.S.D. Indiana; A. Kozar, Ph.D. Michigan; W. Liemohn, Ph.D. Iowa; I. Rockett, Ph.D. Brown; B. Wallace, Ed.D. Northern Colorado; H. Welch, Ph.D. Florida

**Associate Professors**
- P. Carney, Ph.D. Wayne State; M. Keel, Ph.D. Tennessee; R. Pursley, Ph.D. Iowa; S. Smith, Ed.D. Tennessee; D. Thompson, Ph.D. Virginia; S. Zhang, Ph.D. Oregon

**Assistant Professors**
- D. Klein, Ph.D. Arizona State

**Minor in Gerontology**

An Intercollegiate/Interdisciplinary Undergraduate Gerontology Minor is coordinated through the Department of Health and Exercise Science. In addition to the coordinating department, participating programs include Adult Education; Audiology and Speech Pathology; Child and Family Studies; Educational Psychology and Counseling; Interior Design; Human Resource Development; Retail and Consumer Sciences; Nursing; Nutrition; Social Work and Sociology. The minor requires twelve hours from the following: Child and Family Studies 312 Family in Middle and Late Adulthood (3); Health 406 Death, Dying, and Bereavement (3); Health 465 Aging and Health (3); Sociology 415 Sociology of Aging (3); Nursing 400 Aging and Society (3); and Practicum Experience (taken within any of the participating department prefixes) (3).

**COMMUNITY HEALTH EDUCATION MAJOR**

The Community Health Education program prepares students to work in a variety of settings that focus on health promotion and disease prevention among individuals, families, and their communities. Toward this end, the program includes traditional classroom experiences as well as community experiences, both of which revolve around a socio-ecological perspective of health promotion. This perspective assists students in developing an ability to foster voluntary change in health behavior through a combination of educational, political, and social interventions. The program is designed to prepare entry-level health education specialists. Typical employment settings include local health departments, voluntary health agencies and worksites.

**Progression Requirements**

For progression into Community Health Field Experience H483, students must meet the following criteria:
1. Earn a grade of C or better in Chemistry 100, 110; EEB 230, 240; Psychology 110, and 430; all Health (H) and Public Health (PH); and Safety courses.
2. Attain a cumulative GPA of 2.3 for credit hours attempted at The University of Tennessee.
3. Complete an application/interview with the instructor (of Health 483) prior to the end of the fifth week of the semester preceding the field experience.

**Requirements for the Bachelor of Science in Human Ecology • Community Health Education Major**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>English 101, 102</td>
<td>6</td>
</tr>
<tr>
<td>Mathematics 119 or 123, and 125</td>
<td>6</td>
</tr>
<tr>
<td>Chemistry 100, 110</td>
<td>8</td>
</tr>
<tr>
<td>Nutrition 100 or 300</td>
<td>3</td>
</tr>
<tr>
<td>Psychology 110</td>
<td>3</td>
</tr>
<tr>
<td>Humanities Elective</td>
<td>3</td>
</tr>
<tr>
<td>History Elective</td>
<td>3</td>
</tr>
<tr>
<td>Biochemistry and Cellular and Molecular Biology 230</td>
<td>5</td>
</tr>
<tr>
<td>Ecology and Evolutionary Biology 240</td>
<td>4</td>
</tr>
<tr>
<td>Computer Science 100 or Retail and Consumer Sciences 102</td>
<td>3</td>
</tr>
<tr>
<td>Child and Family Studies 210 or Sociology 120</td>
<td>3</td>
</tr>
<tr>
<td>Health 300</td>
<td>3</td>
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<tr>
<td>Microbiology 210</td>
<td>3</td>
</tr>
<tr>
<td>Mathematics 115 or Statistics 201</td>
<td>3</td>
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<tr>
<td>Public Health 300</td>
<td>3</td>
</tr>
</tbody>
</table>
Minor in Community Health Education

Health 300, 330, 426, 475 ................................................................. 12
Public Health 300, 305 ......................................................................... 6
Psychology 430 ..................................................................................... 3

Total 21

Minor in Adolescent Health

Health 305 (required) ............................................................................. 3
Select 9 hours from the following:
    Health 310, 405, 406, 420, 430, 435; Nutrition 100, 300;
    Safety 443; Child and Family Studies 213 ........................................ 9

Total 12

EXERCISE SCIENCE MAJOR

Progression Requirements

Progression to the Exercise Science Major requires a minimum undergraduate cumulative GPA of 2.5 (including transfer work) after a minimum of 45 hours of coursework and completion of ES 100 Orientation to Exercise Science, Chemistry 120, and Physics 221.

1. Any professional course, taken before or after progression into the Exercise Science Program, must be passed with a minimum letter grade of "C." No professional courses with a grade below "C" will be counted toward the major. Professional courses are: BCMB 230, Exercise Science 325 Athletic Training Techniques, 332 Applied Anatomy, 350 Disease and Injury: Epidemiologic and Demographic Perspectives, 411 Adapted Physical Activity, 414 Fitness Testing and Exercise Prescription, 422 Biomechanics of Human Movement, 480 Physiology of Exercise and all professional electives.

2. Students admitted into the Exercise Science Major must maintain a minimum cumulative GPA of 2.5 thereafter to remain in good academic standing. Students with less than a 2.5 GPA for two consecutive semesters will be dropped from the program.

3. Students must have a minimum cumulative 2.5 GPA to be able to register for, and complete, ES 411 Adapted Physical Activity, 414 Fitness Testing and Exercise Prescription, 422 Biomechanics of Human Movement, and 480 Exercise Physiology.

Requirements for the Bachelor of Science in Education • Exercise Science Major

<table>
<thead>
<tr>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
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<tr>
<td>Exercise Science 100 .....................................................</td>
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</tr>
<tr>
<td>English 101, 102 ..................................................................</td>
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</tr>
<tr>
<td>Mathematics 123-125 or 141-142 or 151-152 .........................</td>
<td>6-8</td>
</tr>
<tr>
<td>Chemistry 120, 130 ...........................................................</td>
<td>8</td>
</tr>
<tr>
<td>Psychology 110 .....................................................................</td>
<td>3</td>
</tr>
<tr>
<td>Humanities Elective ..........................................................</td>
<td>3</td>
</tr>
<tr>
<td>Foreign Language, Multicultural, or Integrative Elective .........</td>
<td>3</td>
</tr>
<tr>
<td>1Proficiency in Two Activities</td>
<td></td>
</tr>
<tr>
<td>Sophomore</td>
<td></td>
</tr>
<tr>
<td>Physics 221, 222 ..................................................................</td>
<td>8</td>
</tr>
<tr>
<td>Biochemistry and Cellular and Molecular Biology 230 ............</td>
<td>5</td>
</tr>
<tr>
<td>Nutrition 100 or 300 .........................................................</td>
<td>3</td>
</tr>
<tr>
<td>Health 310 ..........................................................................</td>
<td>3</td>
</tr>
<tr>
<td>Speech 210, 240 or 270 .......................................................</td>
<td>3</td>
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<td>Humanities Elective ..........................................................</td>
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<tr>
<td>Foreign Language, Multicultural, or Integrative Elective .........</td>
<td>3</td>
</tr>
<tr>
<td>History Elective .................................................................</td>
<td>3</td>
</tr>
<tr>
<td>1Proficiency in Two Activities</td>
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<tr>
<td>Junior</td>
<td></td>
</tr>
<tr>
<td>Exercise Science 325, 332, 350 .............................................</td>
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<tr>
<td>Sport Studies 290 ..................................................................</td>
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<tr>
<td>Sport Studies 291 or 321 or 372 ............................................</td>
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<tr>
<td>Computer Science 100 ..........................................................</td>
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<tr>
<td>Social Science Elective ........................................................</td>
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<td>History Elective .................................................................</td>
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<td>2Professional Electives ........................................................</td>
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<td>Statistics 201 or Mathematics 115 .......................................</td>
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<td>Senior</td>
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<tr>
<td>Exercise Science 411, 414, 422, 480 .....................................</td>
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<tr>
<td>Health 425 or 435 or 465 .....................................................</td>
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<td>English 295 or 360 ...............................................................</td>
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</tr>
<tr>
<td>2Professional Electives ........................................................</td>
<td>15</td>
</tr>
<tr>
<td>3CPR Certification</td>
<td></td>
</tr>
</tbody>
</table>

Total 127-129

1Proficiency in at least four activities. Proficiency: passing an activity course with a minimum grade of “C” or participation in an intercollegiate varsity sport. See advisor.
2Professional elective courses passed with a minimum C grade. See advisor for appropriate courses.
3Exercise Science students must have cumulative minimum GPA of 2.5 (including transfer hours) to register for and complete these courses.
4Evidence of current CPR certification at time of graduation.
Assistant Professor
D. Moyer, Ph.D. Ohio State
Emeriti Faculty
M. Myer, Ed.D. Florida; E. Roeske, Ph.D. Ohio State

Graduate degree only.

Department of NUTRITION

Professors
J. Whelan (Head), Ph.D. Penn State; M. Karlstad, Ph.D. Loyola; D. Sachan, Ph.D. Illinois; J. Skinner, Ph.D. Oregon State; M. Zemel, Ph.D. Wisconsin

Associate Professors
J. Bailey, Ph.D. Iowa State; J. Burney, Ph.D. Tennessee; B. Greer, Ph.D. Tennessee; B. Haughton, Ed.D. Columbia; N. Moussa, Ph.D. Paris

Assistant Professors
J. Bittle, Ph.D. Tennessee; S. Jones, Ph.D. North Carolina; J. Kim, Ph.D. Tennessee; G. Truett, Ph.D. Georgia

The Department of Nutrition promotes an understanding of nutrition for the enhancement of the physiological and social well-being of individuals and families across the lifespan through teaching, research and service. Students learn about nutritional needs from the smallest unit of the cell to the individual’s needs throughout the lifecycle; the ways that attitudes, and beliefs influence food patterns; the management of resources in food service and the properties of foods. Thus, departmental programs service society through graduates who are able to interpret and contribute to social needs in regard to nutrition and wellness, both as professionals and as responsible citizens.

The professional discipline of Nutrition is rooted firmly in general education and provide a clearly defined base of professional knowledge. The foundation for the major includes basic sciences, i.e., chemistry, microbiology, physiology, psychology and sociology. The natural sciences provide a base for understanding nutrient functions in the body and the social sciences to better understand cultural aspects of food and food related consumer needs. In addition, students with a strong research interest may prepare for research-oriented careers in laboratories or as graduate students in nutrition or other biomedical disciplines.

NUTRITION MAJOR

This major is designed for students interested in basic and applied sciences. Students are expected to acquire advanced education in chemistry, biology, food science, and behavioral sciences. The B.S. in Nutrition is currently granted approval status by the Commission of Accreditation/Approval for Dietetics Education of the American Dietetic Association, 216 Jackson Boulevard, Chicago, Illinois 60606-6995, (312) 899-4876. These requirements are regarded as the basic education component for the preparation of persons entering the dietetic profession. The generalist emphasis of this program prepares individuals to enter the dietetic profession in general dietetics and includes nutrition, foodservice systems manage-

ment, management theory and principles and communication sciences including computer and statistical applications. Graduates are prepared to enter accredited dietetic internships. An internship experience completes academic and practice requirements for eligibility as a member of The American Dietetic Association and qualifies the graduate to apply for the Registration Examination to become a Registered Dietitian (R.D.). Students may receive more information from the department about R.D. requirements. R.D.s work as members of health care teams in acute care hospitals and community-based settings, home health care programs, college and university foodservice facilities, wellness clinics and private practice. Extension Service and food companies are also avenues of employment.

Progression Requirements

Students should apply for progression after completing Chemistry 350 and prior to entering Nutrition 313. Applications are available in the departmental office.

For progression into the major, students must meet the following criteria:

1. Cumulative grade point average 2.4 or greater.
2. Grade of C or better in each required Nutrition prefix course.

For graduation, students must earn a grade of C or better in all required Nutrition courses.

Requirements for the Bachelor of Science in Human Ecology • Nutrition Major

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Freshman</strong></td>
<td></td>
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</tr>
<tr>
<td>Chemistry 120, 130</td>
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<td>8</td>
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<tr>
<td>English 101, 102</td>
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<td>6</td>
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<tr>
<td>History-prefix Elective</td>
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<td>3</td>
</tr>
<tr>
<td>Child and Family Studies 210</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Mathematics 119 or 123, and 125</td>
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<tr>
<td>Psychology 110</td>
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<td>3</td>
</tr>
<tr>
<td>Nutrition 100</td>
<td></td>
<td>3</td>
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<tr>
<td><strong>Sophomore</strong></td>
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<td></td>
</tr>
<tr>
<td>Hotel and Restaurant Administration 210, 321</td>
<td></td>
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<td>Nutrition 201, 302</td>
<td></td>
<td>4</td>
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<tr>
<td>Economics 201</td>
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<tr>
<td>Nutrition 102</td>
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<td>3</td>
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<tr>
<td>Microbiology 210</td>
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<td>3</td>
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<tr>
<td>Statistics 201</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Biochemistry and Cellular and Molecular Biology 230</td>
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<td>5</td>
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<tr>
<td>Electives</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td><strong>Junior</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accounting 201</td>
<td></td>
<td>3</td>
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<tr>
<td>History Elective</td>
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<td>3</td>
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<tr>
<td>Humanities Elective</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Retail and Consumer Science 341</td>
<td></td>
<td>3</td>
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<tr>
<td>Elective</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td><strong>Senior</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Human Ecology 410</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>History Elective</td>
<td></td>
<td>3</td>
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<tr>
<td>Humanities Elective</td>
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<tr>
<td>Elective</td>
<td></td>
<td>6</td>
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<tr>
<td>Hotel and Restaurant Administration 326, 341</td>
<td></td>
<td>4</td>
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<tr>
<td>Humanities Elective</td>
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<td>Elective</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td>129</td>
</tr>
</tbody>
</table>

1 Credit for these courses must be earned at The University of Tennessee.
Minor in Nutrition
Nutrition 100, 302, 310, 313, 314 ................................................................. 16
All course prerequisites are required. A student must earn a
grade of “C” or better in each course to successfully complete the
requirements for this minor.

Department of
SPORT AND LEISURE STUDIES

Professors
J. T. DeSensi (Head), Ed.D. North Carolina (Greensboro);
G. A. Hayes, Ph.D. North Texas State; C. A. Wrisberg, Ph.D.
Michigan
Associate Professors
R.E. Jones, Ph.D. Toledo; D. R. Kelley, Ph.D. Georgia State;K.
L. Krick, Re.D. Indiana
Assistant Professors
L. A. Fisher, Ph.D. Berkley; R. L. Hardin, Ph.D. Tennessee;
M.G. McCutchen, Ed.D. North Carolina (Greensboro); T. M.
Stratta, Ph.D. Southern Illinois
Adjunct Assistant Professors
J. Bemiller, J.D.; J. Beltrn, M.S.; J. Cronan, M.S.; H. Denton,
M.S.; P. Fain M.S.; T. Irwin, J.D.; W. Myers, M.S.;
E. Schlesisman, Ph.D.; P. Summitt, M.S.; C. Tegano, Ed.D.;
J. Whitney, Ph.D.
Adjunct Instructors
M. Brown, M.S.; E. Catignani, M.S.; D. Jennings, B.S.;
W. Schmidt, M.S.; D. Thomas, M.S.; K. White, B.S.
Internship Coordinator
L. Y. Brown, M.S.
Lecturers
S. Causey, M.S.; L. Y Brown, M.S.
Artist in Residence—Dance
P. Burke

RECREATION AND LEISURE STUDIES MAJOR

The professional disciplines that comprise Recreation and
Leisure Studies prepare students for management and leadership
positions in service management and sport enterprises. The
curriculum is one of only two programs in the state of Tennes-
see that is accredited in General Recreation and the only pro-
gram accredited in Therapeutic Recreation by the National
Recreation and Park Association’s Council on Accreditation.
The Service Management concentration is designed to as-
sist students in gaining knowledge, responsibility and creativ-
ity to meet the changing environment of complex management
in the recreation industry in the 21st century. A business minor
is built into the degree requirements. Graduates are prepared
for employment in travel and tourism agencies, convention bu-
reaus, resorts, corporate sector, public/quasi-public recreation
agencies, voluntary and religious organizations.
The Therapeutic Recreation concentration prepares students
for employment in management and leadership positions with
agencies that deliver health care services. Graduates fulfill the
eligibility requirements for National Therapeutic Recreation
Society certification. Graduates are successful in securing
employment in psychiatric institutions, physical rehabilitation
units, drug and alcohol treatment centers, and community-based
programs.
A minimum of a 2.3 GPA is required for progression to and
retention into the program.

Requirements for the Bachelor of Science in Human
Ecology • Recreation and Leisure Studies Major •
Service Management Concentration (Accredited in
General Recreation by NRPA/AALR)

<table>
<thead>
<tr>
<th>Freshman</th>
<th>Hours</th>
<th>Credit</th>
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<tbody>
<tr>
<td>English 101, 102</td>
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<tr>
<td>History Electives</td>
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<td>6</td>
</tr>
<tr>
<td>Retail and Consumer Sciences 102</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Humanities Elective</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Mathematics 125 or 141</td>
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<td>3</td>
</tr>
<tr>
<td>Mathematics Elective</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Hotel and Restaurant Administration 119</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Recreation and Leisure Studies 201</td>
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<td>4</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Sophomore</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accounting 201, 202</td>
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<tr>
<td>Economics 201</td>
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<td>Statistics 201</td>
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<tr>
<td>Business Administration 204</td>
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<td>4</td>
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<tr>
<td>Natural Science Electives</td>
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<td>6-8</td>
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<tr>
<td>Recreation and Leisure Studies 290</td>
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<td>2-3</td>
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<tr>
<td>Recreation and Leisure Studies 320</td>
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<td>3</td>
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<tr>
<td>Speech 210 or Speech 240</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Health 310</td>
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<table>
<thead>
<tr>
<th>Junior</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retail and Consumer Science 341</td>
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</tr>
<tr>
<td>1Marketing 300</td>
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<td>3</td>
</tr>
<tr>
<td>1Finance 301</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Recreation and Leisure Studies 310</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Hotel and Restaurant Administration 311</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Hotel and Restaurant Administration 323</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Hotel and Restaurant Administration 376</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Recreation and Leisure Studies 390</td>
<td></td>
<td>2-3</td>
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<tr>
<td>Hotel and Restaurant Administration 390</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Recreation and Leisure Studies 415, 440, 470, Forestry 321, 423,</td>
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<td></td>
</tr>
<tr>
<td>Hotel and Restaurant Administration 324, 335, 423, 424,</td>
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<td>3</td>
</tr>
<tr>
<td>Retail and Consumer Sciences 411</td>
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<td>6</td>
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</table>

<table>
<thead>
<tr>
<th>Senior</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electives</td>
<td></td>
<td>8</td>
</tr>
<tr>
<td>Recreation and Leisure Studies 410</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Hotel and Restaurant Administration 425</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Human Ecology 410</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Management 300</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Recreation and Leisure Studies 490</td>
<td></td>
<td>12</td>
</tr>
</tbody>
</table>

Total 128-132

1 All upper division (300 level or above) business course work must be taken at The
University of Tennessee.
2 Select any two courses from this block.

NOTE:
A. 2.3 GPA is required for college affiliation and progress in the major.
B. Recreation 290 and 390 are for recreation majors only and are required
prior to enrolling in internship.
C. 2.3 GPA is required for enrollment in Recreation and Leisure Studies 310 and
490.
D. 2.3 GPA is required for internship and for declaring a major in Recreation
and Leisure Studies.
E. A minimum of 48 upper division hours are required for graduation.
**Requirements for the Bachelor of Science in Human Ecology • Recreation and Leisure Studies Major • Therapeutic Recreation Concentration (Accredited in General Recreation and Therapeutic Recreation by NRPA/AALR)**

<table>
<thead>
<tr>
<th>Freshman</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>English 101, 102 ..................................</td>
<td>6</td>
</tr>
<tr>
<td>Mathematics Electives ..................................</td>
<td>6</td>
</tr>
<tr>
<td>History Electives ..................................</td>
<td>6</td>
</tr>
<tr>
<td>Retail and Consumer Sciences 102 ..........</td>
<td>3</td>
</tr>
<tr>
<td>Child and Family Studies 220 ...............</td>
<td>3</td>
</tr>
<tr>
<td>Recreation and Leisure Studies 201 ..........</td>
<td>3</td>
</tr>
<tr>
<td>Psychology 110 ..................................</td>
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</tr>
</tbody>
</table>

**Sophomore**

| Classes 273 .................................. | 3 |
| Child and Family Studies 210 ............... | 3 |
| Ecology and Evolutionary Biology, Biology Electives | 3-4 |
| Biochemistry and Cellular and Molecular Biology 230 | 5 |
| Speech 210 or 240 .................................. | 3 |
| Health 310 .................................. | 3 |
| Recreation and Leisure Studies 290 .......... | 2-3 |
| Recreation and Leisure Studies 320, 325 .......... | 6 |
| Philosophy 345 .................................. | 3 |
| Electives .................................. | 3 |

**Junior**

| Exercise Science 332 or | 3 |
| Ecology and Evolutionary Biology 240 | 3 |
| Psychology 330 | 3 |
| Sociology or Psychology Electives | 6 |
| 1Professional Support Electives | 6 |
| Recreation and Leisure Studies 310, 425 | 6 |
| Recreation and Leisure Studies 390 | 2-3 |
| Electives .................................. | 3 |

| Recreation and Leisure Studies 450, |  |
| Psychology 409, Health 406, 435, |  |
| Sociology 414, Special Education 470 | 3 |

**Senior**

| Human Ecology 410 | 3 |
| Exercise Science 411 | 3 |
| Recreation and Leisure Studies 311, 410, 420 | 9 |
| Recreation and Leisure Studies 490 | 12 |
| Electives ................. | 4 |

**Total** 128-131

1Courses must be in addition to those specified for the major and must be selected from: Business Administration, Child and Family Studies, Health and Safety Sciences, Recreation and Leisure Studies, Human Services, Sociology, and Psychology.

2Select any one course from this block.

**Progression Requirements**

Students must complete an application upon completion of the following minimum criteria:

1. Minimum of 30 semester hours for all college work (transfer work included).
2. Minimum 2.5 GPA for all college work (transfer work included).
3. Completion of Sport Management 100 and 250 with a grade of “C” or better.
4. Completion of English 101 and 102, and Mathematics 125 or 141.

**Board of Admissions**

The Board of Admissions consists of the Sport Management Program faculty and will meet at the end of each term to review applications. Applications must be submitted by December 1, May 1, or August 1 to be considered for the following term.

The Board of Admissions will base admissions decisions on applicants’ academic qualifications, oral and written communication skills, experience in sport management, and expressed interest in sport management.

**Retention**

Students admitted to the Sport Management major must maintain a minimum cumulative GPA of 2.5 to remain in good academic standing. Students who drop below the minimum for one semester will be advised of their status by letter. Students who are below the minimum for two semesters will be advised by letter that they have been dropped from the major.

**Requirements for the Bachelor of Science Education • Sport Management Major**

<table>
<thead>
<tr>
<th>Freshman</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>English 101, 102 ..................................</td>
<td>6</td>
</tr>
<tr>
<td>Communication 100 or Journalism 201 ..........</td>
<td>3</td>
</tr>
<tr>
<td>Foreign Language, Multicultural, or Integrative Electives</td>
<td>6</td>
</tr>
<tr>
<td>Computer Science 100 ..........</td>
<td>3</td>
</tr>
<tr>
<td>History Electives ..................................</td>
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</tr>
<tr>
<td>Sport Management 100 ..........</td>
<td>1</td>
</tr>
<tr>
<td>Humanities Elective .................</td>
<td>3</td>
</tr>
<tr>
<td>Mathematics to include 125 or 141 ..........</td>
<td>6-7</td>
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</tbody>
</table>

**Sophomore**

| Accounting 201, 202 | ... | 5 |
| Economics 201 | 4 |
| Business Administration 201 | 4 |
| Natural Science Electives | 8 |
| Sociology 291 .......... | 3 |
| Speech 210 or 240 .......... | 3 |
| Sport Management 250 .......... | 3 |
| Statistics 201 .......... | 3 |
| Sport Management 290 .......... | 3 |

**Junior**

| Finance 301 .......... | 3 |
| Management 300 .......... | 3 |
| Humanities Elective .......... | 3 |
| Sport Studies 321 or 372 .......... | 3 |
| Marketing 300 .......... | 3 |
| General Electives .......... | 9 |
| Sport Management 350 .......... | 3 |
| Sport Management 390 .......... | 3 |

**SPORT MANAGEMENT MAJOR**

The Sport Management major is designed for students interested in working in the sport industry. The program combines Sport Management and Sport Studies with a minor in Business Administration. The program concludes with a semester-long internship experience.
ART EDUCATION MAJOR

Students seeking licensure to teach art in the schools pursue the Bachelor of Fine Arts Degree in Studio Art in the College of Arts and Sciences and will complete a major in Art Education at the undergraduate level. The undergraduate major in Art Education includes the following:

### Core Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dance 480</td>
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</tr>
<tr>
<td>Dance 490</td>
<td>3</td>
</tr>
</tbody>
</table>

### OPTION I: PERFORMANCE

| Select from Dance 310*, 320*, 330*, 340, 410**, 420**, 430** | 10 |
| Dance 440       | 2            |
| Dance 445       | 2            |

### OPTION II: PEDAGOGY

| Select from Dance 310*, 320*, 330*, 340, 410**, 420**, 430** | 6 |
| Dance 415       | 2            |
| Dance 440       | 2            |
| Dance 445       | 2            |
| Dance 495       | 3            |

*Course may be repeated for up to 12 credit hours.  **Course may be repeated for up to 16 credit hours.

The following courses are taken during the post-baccalaureate Professional Year:

### Undergraduate Total

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education 574</td>
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</tr>
<tr>
<td>Education 575</td>
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</tr>
<tr>
<td>Education 591</td>
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<tr>
<td>Art Education 530</td>
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<tr>
<td>Art Education 540</td>
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</tbody>
</table>

### Graduate Total

<table>
<thead>
<tr>
<th>Course Code</th>
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</thead>
<tbody>
<tr>
<td>Anthropology 110 or 130</td>
<td>3</td>
</tr>
<tr>
<td>Anthropology 110 or 130</td>
<td>3</td>
</tr>
<tr>
<td>Art, Music or Theatre Elective</td>
<td>3</td>
</tr>
<tr>
<td>Anthropology 110 or 130</td>
<td>3</td>
</tr>
<tr>
<td>Foreign Language, Multicultural or Integrative Electives</td>
<td>6</td>
</tr>
<tr>
<td>Natural Science Electives</td>
<td>3-4</td>
</tr>
</tbody>
</table>

NOTE: Teacher licensure is granted at the successful completion of the Professional Year; 12 additional hours may be taken to complete the Master's Degree. For details, see the Graduate Catalog.

**SPECIAL EDUCATION MAJOR**

**Educational Interpreting Concentration**

### Progression Requirements

Progression to the Educational Interpreting Concentration requires a 2.7 cumulative GPA after a minimum of 30 semester hours of coursework and completion of EI 223 and 226 with a grade of “B” or better in both courses.

A Board of Admissions will meet once each Fall and Spring to review applications and conduct interviews with each applicant.

Students admitted to the program must maintain a minimum cumulative GPA of 2.7 while in the program. Students with less than a 2.7 GPA for two consecutive semesters will be dropped from the program.

Students who fail to meet the standards for professional conduct during the course of their field work will not be retained in the major.

**Requirements for the Bachelor of Science Education • Special Education Major • Educational Interpreting Concentration**

### Freshman

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>English 101, 102</td>
<td>6</td>
</tr>
<tr>
<td>Art, Music or Theatre Elective</td>
<td>3</td>
</tr>
<tr>
<td>Anthropology 110 or 130</td>
<td>3</td>
</tr>
<tr>
<td>Foreign Language, Multicultural or Integrative Electives</td>
<td>6</td>
</tr>
<tr>
<td>Natural Science Electives</td>
<td>3-4</td>
</tr>
</tbody>
</table>
Freshman Hours Credit
English 101, 102 ................................................................. 6
Art, Music, or Theatre Elective ................................ 3
Anthropology 110 or 130 .............................................. 3
Foreign Language, Multicultural or Integrative Electives .............. 6
Natural Science Elective .............................................. 3-4
Sociology Elective .......................................................... 3
Physical Education Activity or Recreation Therapy Elective ............ 2-3
Mathematics 110-115 or 123-125 ...................................... 6

Sophomore Hours Credit
Speech 210, 220, or 240 .................................................... 3
Literature Elective ............................................................. 3
Human Services 380 ........................................................ 3
Psychology Elective ......................................................... 3
History 241, 242 ............................................................... 6
Biological Science Elective .............................................. 4
Natural Science Elective .................................................. 3-4
Educational Interpreting 223, 226 ...................................... 6

Junior Hours Credit
Instructional Technology 486 ........................................ 3
Philosophy 240 ................................................................. 3
Political Science or Economics Elective ............................. 3
Educational Psychology 210 ............................................ 3
Health 305 or 306 ............................................................. 2
Cultural Studies in Education 400 ..................................... 2
Educational Psychology 401 ............................................ 3
Educational Interpreting 340 ............................................ 6
Educational Interpreting 350 ............................................ 6
Educational Interpreting 335 ............................................ 6
Senior
Education of the Deaf/Hard of Hearing 415, 416, 425 ................ 9
Educational Interpreting 345 ............................................ 3
Special Education 402 ..................................................... 2
Educational Interpreting 345 ............................................ 3
Educational Interpreting 440 ............................................ 6

Total 122-125

Requirements for the Bachelor of Science Education •
Special Education Major • Education of the Deaf and
Hard of Hearing Concentration

Freshman Hours Credit
English 101, 102 ................................................................. 6
Art, Music, or Theatre Elective ................................ 3
Anthropology 110 or 130 .............................................. 3
Foreign Language, Multicultural or Integrative Electives .............. 6
Natural Science Elective .............................................. 3-4
Sociology Elective .......................................................... 3
Physical Education Activity or Recreation Therapy Elective ............ 2-3
Mathematics 110-115 or 123-125 ...................................... 6

Sophomore Hours Credit
Speech 210, 220, or 240 .................................................... 3
Literature Elective ............................................................. 3
Human Services 380 ........................................................ 3
Psychology Elective ......................................................... 3
History 241, 242 ............................................................... 6
Biological Science Elective .............................................. 4
Natural Science Elective .................................................. 3-4

Junior Hours Credit
Instructional Technology 486 ........................................ 3
Philosophy/Religious Studies 345 ..................................... 3
Political Science or Economics Elective ............................. 3
Educational Psychology 210 ............................................ 3
Health 305 or 306 ............................................................. 3
Foreign Language, Multicultural or Integrative Electives .............. 6
Cultural Studies in Education 400 ..................................... 2
Educational Psychology 401 ............................................ 3
Special Education 402 ..................................................... 2
Educational Methods (see advisor) ..................................... 2

Senior Hours Credit
Humanities Elective .......................................................... 3
Educational Interpreting 223 ............................................ 3
Education of Deaf/Hard of Hearing 410, 415, 416,
419, 425 ................................................................. 16
Audiology and Speech Pathology 303 and 473 or
Education of the Deaf/Hard of Hearing 424 .................... 6
Audiology and Speech Pathology 494 ................................ 3

Total 121-124
The following courses are taken during the post-baccalaureate Professional Year:

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education 574</td>
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<tr>
<td>Education 575</td>
<td>12</td>
</tr>
<tr>
<td>Education 591</td>
<td>4</td>
</tr>
<tr>
<td>Education of the Deaf/Hard of Hearing 528, 529</td>
<td>6</td>
</tr>
<tr>
<td><strong>Graduate Total</strong></td>
<td><strong>24</strong></td>
</tr>
</tbody>
</table>

*A physical or biological science course to complete science sequence.

**TEACHING MINORS**

Students who are earning a baccalaureate degree in the College of Arts and Sciences and who are also seeking teacher licensure in Elementary Education, English Education, Foreign Language Education, Mathematics Education, Music Education, Science Education, or Social Science Education are urged to earn a minor in either Elementary or Secondary Education. Students who do not earn a minor as a part of their undergraduate studies will be required to complete the equivalent of a minor as a prerequisite to entering the fifth year of professional study.

Students should note that courses taken to satisfy the minor will not fulfill teacher licensure requirements.

**Minor in Elementary Education**

Students interested in becoming Elementary school teachers (K-Grade 8) earn a BA or BS degree in the College of Arts and Sciences (see Pre-Teaching Programs). While completing requirements for the baccalaureate degree, students are encouraged to take a minor in Elementary Education:

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Educational Psychology 210</td>
<td>3</td>
</tr>
<tr>
<td>Reading Education 430</td>
<td>2</td>
</tr>
<tr>
<td>Instructional Technology 486</td>
<td>2</td>
</tr>
<tr>
<td>Cultural Studies in Education 400</td>
<td>2</td>
</tr>
<tr>
<td>Educational Psychology 401</td>
<td>2</td>
</tr>
<tr>
<td>Special Education 402</td>
<td>2</td>
</tr>
<tr>
<td>Elementary Education 351</td>
<td>2</td>
</tr>
<tr>
<td>Elementary Education 422</td>
<td>6</td>
</tr>
<tr>
<td><strong>Undergraduate Total</strong></td>
<td><strong>25</strong></td>
</tr>
</tbody>
</table>

The following courses are taken during the post-baccalaureate Professional Year:

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education 574</td>
<td>2</td>
</tr>
<tr>
<td>Education 575</td>
<td>12</td>
</tr>
<tr>
<td>Education 591</td>
<td>4</td>
</tr>
<tr>
<td>Theory and Practice in Teacher Education 505</td>
<td>6</td>
</tr>
<tr>
<td><strong>Graduate Total</strong></td>
<td><strong>24</strong></td>
</tr>
</tbody>
</table>

NOTE: Teacher licensure is granted at the successful completion of the Professional Year; 12 additional hours may be taken to complete the Master’s Degree. For details, see the Graduate Catalog.

**Minor in Middle School Education**

Students interested in becoming middle school teachers (Grades 5-8) earn a BA or BS degree in the College of Arts and Sciences (see Pre-Teaching Programs). While completing requirements for the baccalaureate degree, students are encouraged to take a minor in Middle School Education:

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Educational Psychology 210</td>
<td>3</td>
</tr>
<tr>
<td>Information Sciences 330</td>
<td>3</td>
</tr>
<tr>
<td>Reading Education 440</td>
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<tr>
<td>Instructional Technology 486</td>
<td>2</td>
</tr>
<tr>
<td>Cultural Studies in Education 400</td>
<td>2</td>
</tr>
<tr>
<td>Educational Psychology 401</td>
<td>2</td>
</tr>
<tr>
<td>Special Education 402</td>
<td>2</td>
</tr>
<tr>
<td>Elementary Education 351</td>
<td>2</td>
</tr>
<tr>
<td>Elementary Education 422</td>
<td>6</td>
</tr>
<tr>
<td><strong>Undergraduate Total</strong></td>
<td><strong>25</strong></td>
</tr>
</tbody>
</table>

The following courses are taken during the post-baccalaureate Professional Year:

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education 574</td>
<td>2</td>
</tr>
<tr>
<td>Education 575</td>
<td>12</td>
</tr>
<tr>
<td>Education 591</td>
<td>4</td>
</tr>
<tr>
<td>Theory and Practice in Teacher Education 505</td>
<td>6</td>
</tr>
<tr>
<td><strong>Graduate Total</strong></td>
<td><strong>24</strong></td>
</tr>
</tbody>
</table>

NOTE: Teacher licensure is granted at the successful completion of the Professional Year; 12 additional hours may be taken to complete the Master’s Degree. For details, see the Graduate Catalog.

**Minor in Secondary Education**

Students interested in becoming Secondary school teachers earn a BA or BS degree in the College of Arts and Sciences (e.g., English, mathematics, etc.). While completing requirements for the baccalaureate degree, students are encouraged to take a minor in Secondary Education:

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Educational Psychology 210</td>
<td>3</td>
</tr>
<tr>
<td>Theory and Practice in Teacher Education 352</td>
<td>1</td>
</tr>
<tr>
<td>Theory and Practice in Teacher Education 355</td>
<td>3</td>
</tr>
<tr>
<td>Cultural Studies in Education 400</td>
<td>2</td>
</tr>
<tr>
<td>Educational Psychology 401</td>
<td>2</td>
</tr>
<tr>
<td>Special Education 402</td>
<td>2</td>
</tr>
<tr>
<td>Instructional Technology 486</td>
<td>3</td>
</tr>
<tr>
<td><strong>Undergraduate Total</strong></td>
<td><strong>16</strong></td>
</tr>
</tbody>
</table>

The following courses are taken during the post-baccalaureate Professional Year:

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education 574</td>
<td>2</td>
</tr>
<tr>
<td>Education 575</td>
<td>12</td>
</tr>
<tr>
<td>Education 591</td>
<td>4</td>
</tr>
<tr>
<td>English Education</td>
<td>3</td>
</tr>
<tr>
<td>Social Science Education 454, Foreign Language/ESL Education 454, English Education 459, Mathematics Education 485, Science Education 495</td>
<td>3</td>
</tr>
<tr>
<td><strong>Graduate Total</strong></td>
<td><strong>24</strong></td>
</tr>
</tbody>
</table>

NOTE: Teacher licensure is granted at the successful completion of the Professional Year; 12 additional hours may be taken to complete the Master’s Degree. For details, see the Graduate Catalog.
Engineers solve problems. To do so, they apply science, mathematics, and creativity to invent, design, test, build and operate engineering systems that will meet the needs of society. In the latter half of the 20th century, engineers developed the personal computer, the space shuttle, artificial hearts and many other “high-tech” products. The opportunities to use technology for the benefit of 21st century society will be even greater.

Engineers use the same problem-solving strategies whether designing a bridge, trouble shooting a computer chip problem or developing a more efficient automobile engine. This commonality of approach makes it easy for an engineer to move from one specialization to another, and it happens frequently. The engineer’s can-do, problem solving outlook is also good preparation for management, and many engineers follow this career path.

Increasingly, engineers must also have good interpersonal skills to work effectively in the interdisciplinary groups required to tackle modern engineering projects. They must understand the ethical, environmental, social, political, and business implications of their work. Engineers must work comfortably among the cultures, customs and languages of multi-national enterprises.

In light of modern society’s ever-increasing dependence on technology, there is a continuing and urgent need for engineering graduates who possess the high levels of technical competence and social understanding that will enable them to fulfill their responsibilities as professional engineers. The College of Engineering prepares men and women to face these challenges and to seize their opportunities to become the technology leaders of the 21st century.

Graduates of the Bachelor of Science curricula offered by the college may enter directly into a position in industry, government, or private practice, or may pursue advanced study in graduate school. Their professional activities include research, development, design, operations analysis, construction, production supervision, and technical sales. Many practice their profession in Tennessee; but engineering knows no geographical bounds, and graduates of the college serve throughout the nation and in other countries as well.

The college has eleven major undergraduate curricula in which a student may specialize: aerospace engineering, biomedical engineering, chemical engineering, civil engineering, computer engineering, electrical engineering, industrial engineering, materials science and engineering, mechanical engineering, nuclear engineering, and engineering physics.

Biosystems engineering is based in the College of Agricultural Sciences and Natural Resources with facilities located on the Agricultural Campus. The biosystems engineering curriculum is offered cooperatively by the College of Agricultural Sciences and Natural Resources and the College of Engineering. Details of the curriculum may be found in the College of Agricultural Sciences and Natural Resources section of this catalog.

The college, in cooperation with industrial sponsors, established the Diversity Engineering Scholarship Program in 1973. The program goal is to increase significantly the number of qualified minority engineering graduates.

Facilities

Most of the college’s facilities are on the southeastern corner of The Hill. Administration, Civil and Environmental Engineering, and Biomedical Engineering are in Perkins Hall; Electrical and Computer Engineering are in Ferris Hall; Industrial Engineering and the Interdisciplinary Engineering Research Centers are in East Stadium Hall; Nuclear Engineering is in the Pasqua Engineering Building; Mechanical and Aerospace,
Chemical, and Materials Science are in Dougherty Hall. The Engineering Fundamentals Division is located in Estabrook Hall. The Co-op Office and the Engineering Diversity Programs Office are in Perkins Hall. The Engineering Physics program is administered through The University of Tennessee Physics Department in the Nielsen Physics Building.

Cooperative Engineering and Professional Practice

The Cooperative Engineering Program (Co-op) provides an augmented engineering education that includes significant experience in industry as well as superior academic preparation. Our Cooperative Engineering Program was established in 1926. The University of Tennessee was one of the early pioneers in this valuable type of education.

Co-op work assignments differ from part-time or summer employment in that they involve regularly scheduled cycles of full-time academic terms alternating with full-time work periods, resulting in planned, career-related work terms of progressive complexity and responsibility. In introducing the student to engineering employment, the college and industry join together to offer a broader and richer preparation for postgraduate employment than can be provided by a conventional academic program. This experience in an industrial and professional environment contributes to the student’s maturity, accelerates professionalism, offers an opportunity to apply engineering course work in a real-world setting, and enables the student to define more clearly educational and career interests and objectives. All positions are paid positions, and most students are able to offset a substantial amount of their college expenses with Co-op savings.

Introduction to the Cooperative Engineering Program (for new students, transfers, second-degree students, and reentry students) begins in the first semester at the university. Assignments are determined by employer and student. All engineering students are encouraged to visit the program office.

Candidates must be able to project a minimum of 52 weeks of Co-op experience prior to the senior year, within the regular alternating sequence, to qualify for an assignment.

Further details may be obtained from the Cooperative Engineering Program, 310 Perkins Hall, The University of Tennessee, Knoxville, TN 37996-2012. You may also contact the Co-op office via e-mail at coop @ engr.utk.edu or via the program home-page at http://www.coop.utk.edu

International Engineering Program

The United States, like most countries throughout the world, can no longer thrive economically with only a domestic market for its goods and services. To compete in the global marketplace, engineers must understand how to design and manufacture products for world-wide use. The College of Engineering works with several organizations, both on and off campus, to enable interested students to participate in significant engineering experiences abroad. Students interested in making an international experience part of their engineering education should begin exploring opportunities and develop plans during the freshman year. Language preparation to a level of substantial proficiency may be required. Thus, language preparation should be started immediately. For further information on international engineering educational programs, contact the UT Center for International Education, 1620 Melrose Avenue.

Graduate Program

Graduate programs leading to the degree of Master of Science are offered in eleven areas of study: aerospace engineering, chemical engineering, civil engineering, electrical engineering, engineering science, environmental engineering, industrial engineering, materials science and engineering, mechanical engineering, nuclear engineering, and polymer engineering. The degree of Doctor of Philosophy is offered in nine major subjects: aerospace engineering, chemical engineering, civil engineering, electrical engineering, engineering science, materials science and engineering, mechanical engineering, nuclear engineering, and polymer engineering. Information concerning graduate programs is given in the Graduate Catalog.

Tau Beta Pi National Headquarters

The college is honored to have the national headquarters of Tau Beta Pi, the National Engineering Honor Society, housed on our campus since 1907. This honor was earned in part through the untiring efforts of R.C. “Red” Matthews, who served as Secretary-Treasurer for the organization from 1905 to 1947. The suite of offices, located in Dougherty Hall, is occupied by Mr. J.D. Froula, Secretary-Treasurer, and Roger Hawks, Assistant Secretary-Treasurer.

Curricula in Engineering

National Accreditation

Since 1936, engineering programs at institutions of higher learning have been accredited by an organization formed by many engineering societies and known as the Accreditation Board for Engineering and Technology (ABET). ABET accreditation ensures that graduates of The University of Tennessee engineering programs are adequately prepared to enter and continue the practice of engineering. Accredited engineering programs at The University of Tennessee include aerospace, biosystems, chemical, civil, electrical, engineering science, industrial, mechanical, materials science, and nuclear. Co-op programs in the above areas are also accredited.

Accreditation criteria require each engineering degree program to design a curriculum and educational process that will achieve defined educational objectives consistent with ABET criteria and the mission of The University of Tennessee. The educational objectives of each degree program are presented by the department responsible for the program later in this chapter. In each case the objectives are consistent with the mission of the College of Engineering. That mission is to:

• provide high quality education in the major engineering disciplines from the undergraduate through doctoral levels through a creative balance of academic, professional, and extracurricular programs;
• foster and maintain mutually beneficial partnerships with our alumni, friends, industry, and local, state, and federal governments through public services, assistance, and collaborative research; and
• to be a major contributor to our nation’s technology base through scholarship and research.

In addition, the educational objectives of each degree program are also guided by and consistent with the strategic objectives of the College of Engineering. Two particularly relevant
strategic objectives are “to continuously provide quality delivery of courses, programs, extracurricular activities, assistance, and support that enhances each student’s desire to learn and that excites each student’s interest in engineering and the work environment” and “to continuously provide and improve the education and working abilities that employers want our engineering graduates to have.”

ABET accreditation criteria also require an assessment process to ensure that program outcomes critical to successful engineering practice are being achieved. Assessment of eleven program outcomes common to all engineering disciplines are required by ABET. Specifically, each engineering degree program must demonstrate that its graduates have:

- an ability to apply knowledge of mathematics, science, and engineering;
- an ability to design and conduct experiments, as well as to analyze and interpret data;
- an ability to design a system, component, or process to meet desired needs;
- an ability to function on multi-disciplinary teams;
- an ability to identify, formulate, and solve engineering problems;
- an understanding of professional and ethical responsibility;
- an ability to communicate effectively;
- the broad education necessary to understand the impact of engineering solutions in a global/societal context;
- a recognition of the need for and an ability to engage in lifelong learning;
- a knowledge of contemporary issues;
- an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

The College of Engineering has embraced these program outcomes as valid and valuable indicators of educational program effectiveness. Thus, the College prepares students to demonstrate sufficiency and to strive for excellence in each of these areas. This goal is achieved by ensuring that instruction and other learning experiences are provided that will produce each program outcome. Engineering courses, mathematics and natural science courses, and the humanities and social sciences each provide essential contributions to the achievement of this goal. Program outcomes that are critically dependent on humanities and social science courses are discussed in the General Education Requirements section to follow. Additional program outcomes selected by individual degree programs to supplement ABET outcomes are also discussed in subsequent sections.

**Designation of a Minor**

An engineering undergraduate may declare a minor in a non-engineering subject area and have the minor listed on the permanent record under the following conditions:

1. Minors must be officially approved and described in The University of Tennessee catalog. No unofficial minors will be recognized. Minors exist in aerospace engineering, environmental engineering, materials science and engineering, engineering communication and performance, architecture, business administration, and in numerous departments in agricultural science and natural resources and arts and sciences.

2. Courses taken to satisfy the minor may also be used to satisfy engineering degree requirements, provided that the courses would be a part of engineering degree requirements even if no minor was declared. Completion of a minor often involves the taking of some courses which cannot be used to satisfy the minimum requirement for an engineering degree.

3. A student should notify his or her advisor and major department office when beginning work on a minor. The intention to complete a minor must be declared at the time of application for a degree if the minor is to appear on the final transcript. Degree applications are handled by Office of the University Registrar.

**Course Load**

The maximum number of hours which can be taken by an undergraduate engineering student without special permission is 19. The Associate Dean for Academic Affairs must give permission to take 20 hours or more. In general, this decision is based on the student’s previous performance at The University of Tennessee.

**General Requirements**

Students are advised to consult the University’s degree requirements as stated in the front section of this catalog as well as departmental requirements.

**Freshman Placement Criteria**

Placement criteria are in effect for the College of Engineering to promote the maximum opportunity for success among entering freshmen. A success prediction indicator (SPI) is calculated for all incoming students. The SPI is calculated by multiplying the High School GPA by 10 and adding the resulting product to the mathematics component of the ACT. SAT scores can be converted to an equivalent ACT score to perform this calculation.

A pre-requisite for the first engineering course, Engineering Fundamentals 101, is a SPI of equal to or greater than 55, with a co-requisite of Mathematics 130 (pre-calculus) or higher mathematics course. Mathematics placement is determined by examination during orientation. Entering engineering students who do not meet the SPI pre-requisite or cannot qualify for placement in at least Mathematics 130 have the following options:

- Attend The University of Tennessee summer session or another institution and complete a transferable mathematics course equivalent to Mathematics 130 (pre-calculus) with a grade of B or better and a transferable English course equivalent to English 101 with a grade of C or better. OR
- Enroll in our engineering transition curriculum that prepares students to begin EF 101 in their third semester.

**Transfer Students**

Transfer students, including internal UT transfers, must meet the minimum requirements stated below in order to be considered for admission to a major within the College.

1. Must have earned a minimum 2.30 cumulative average over these specific courses, or their equivalent: English 101, 102; Chemistry 120, 130; and Mathematics 141, 142.

2. The overall record will be evaluated for quality and seriousness of purpose. An excessive number of withdrawals, incompletes, repeated courses, or failure may result in denial.

Any UT student desiring association with one of the departments of the College of Engineering should go to the depart-
mental office for the desired major. An interview with the department head or his/her designee is held, with the major items of consideration being the same as for external transfer students. If association is granted, a College/Major/Advisor Change form is processed by the department to officially change the student’s academic home.

**Transfer Credit**

Every attempt will be made to give maximum credit for courses taken elsewhere and transferred to the college. Discussions concerning the evaluation of transfer credits should be conducted with the head of the department (or designee) into which the student is to transfer, but only after receiving the evaluation of transfer credits by the Admissions Office.

**Program for Second Bachelor of Science Degree**

Upon approval by the Dean of Engineering and the Committee on Degrees of a program of study recommended by the major engineering department, a student who already holds a bachelor’s degree may obtain a degree in engineering upon meeting all of the course requirements of the selected engineering program. In no case will the minimum requirement be less than 30 semester credits. The prevailing University regulations shall apply.

**Satisfactory/No Credit Courses**

Engineering majors may take half of the minimum hours required (9) of general education electives on a Satisfactory/No Credit (Satisfactory/No Credit) grading basis. No other courses specified as part of the minimum degree requirements may utilize Satisfactory/No Credit grading, unless a course is offered only on that grading basis. Students are encouraged to take courses of interest which are not part of the minimum degree requirements, and to fully utilize the Satisfactory/No Credit grading option for such coursework.

**Correspondence Courses**

A student should check with his or her major department to see what restrictions there are, if any, on the use of correspondence course credit to meet the minimum degree requirements.

**General Education Electives**

Engineering practice is shaped by many non-technical considerations. Economic, safety and ethical matters have long been of concern. In recent years increasing influence has been exerted by legal, political, governmental, cultural, and international factors. Courses in the humanities and social sciences serve to meet the vital need for awareness and knowledge of these influences on the engineering profession. In addition, they support UT general education goal to develop the basic skills, knowledge, attitudes and judgment necessary for effective citizenship, fulfilling personal interactions and an enriched personal life. Lastly, ABET accreditation requirements mandate a strong general education component as a necessary part of achieving engineering program and institutional objectives.

Humanities and social science courses contribute significantly to the educational objectives of each engineering program and the program outcomes desired of every engineering graduate. In fact, certain program outcomes are critically dependent on contributions from these courses. Thus, in the College of Engineering, humanities and social science courses do more than ensure adequate breadth in the educational experience. They also complement and support engineering courses in developing skills and providing experiences critical to the practice of engineering.

Program outcomes supported by the general education component in engineering curricula and a cluster of courses relevant to that outcome are shown below. The first two outcomes, (1) the broad education necessary to understand the impact of engineering solutions in a global/societal context and (2) a knowledge of contemporary issues, have a fundamental relationship to humanities and social science courses. All engineering students are required to take at least one course from each of these clusters. Engineering programs may specify up to two other clusters that are required in their curriculum to ensure that each program outcome is achieved by either engineering coursework, general education electives, or a combination of the two.

General education requirements in English composition, mathematics, and natural science are fully satisfied by required courses in each engineering curriculum. Electives from the humanities and social sciences, in addition to supporting selected engineering program outcomes, must also satisfy The University of Tennessee general education requirements for these areas of study. Thus, to ensure general education compliance, engineering students must take at least two courses from the arts or humanities clusters; one course from multicultural studies or a two course foreign language sequence; and one course from the social sciences cluster. Additional general education electives can be chosen from any cluster to provide breadth or depth as desired by the student, but a minimum of 18 semester hours is required.

To be accepted as valid within the context of the University’s general education requirements, each course should meet the generally accepted definitions that (1) humanities are the branches of knowledge concerned with humanity and culture; (2) the arts include performance and/or analysis of the visual and written arts, music or theatre, and (3) social sciences are the studies of individual relationships in and to society. Subject areas in the humanities include history, English, philosophy, religion, and classics. The arts will include courses in music, art, theatre and creative writing. Subject areas in the social sciences include sociology, psychology, economics, anthropology, and political science. Acceptability is determined by course content, not by title or administrative home.

Examples of courses not acceptable in the engineering general education program include: (1) a language course in the student’s native language; (2) military science courses unless they are either on the approved list or officially equivalent to a course in the humanities or social sciences in another department; (3) courses whose basic content is science or mathematics; (4) engineering economy; and (5) professional courses in other fields—business, communications, etc.

A course not on the approved list must be approved by the student’s advisor, department head, and the associate dean (in this order), and the approval must be recorded on a departmental substitution form and submitted to the Office of the University Registrar. Transfer courses must be so approved, unless a suitable UT equivalent course number has been assigned as a part of the admissions process.

A student is urged to seek guidance from his or her advisor in choosing these electives, since they are an important part of the learning experience in preparation for engineering practice. Choices should be made on the basis of personal interest and value in engineering practice. Up to 9 hours in this category...
may be taken on a Satisfactory/No Credit grading basis. Credit earned by Advanced Placement or courses transferred from another university as “Satisfactory” are included in the 9-hour limit. However, if more than 9 hours of general education courses have been earned by AP or transfer credit, students may apply for a waiver of the 9-hour limit.

These requirements are not intended to inhibit in any way the selection of courses to be taken by a student while attending The University of Tennessee. There may be courses of interest to a student which are not included on the lists below, but would be of great value in the student’s education. Students are encouraged to consult with their advisor in order to incorporate such courses into their program of study.

Requirements for the General Education Component of All Engineering Curricula:

1. The minimum number of semester credit hours of acceptable courses is 18.
2. One course from the Engineering Practice in a Global/Special Context Cluster.
3. One course from the Contemporary Issues Cluster.
4. A minimum of:
   a. two courses from the Humanities or Arts clusters;
   b. one course from the Multicultural Studies Cluster or two foreign language courses;
   c. one course from the Social Sciences Cluster.
5. Other courses or clusters as established by departmental requirements to support selected program outcomes.
6. Courses may simultaneously meet more than one requirement (e.g. a multicultural course may also satisfy the Engineering Practice in a Global/Special Context Cluster).
7. For a foreign language to be used in meeting general education requirements (a) at least two courses in the same language must be taken and (b) the language cannot be the native language of the student.

Approved General Education Electives

Courses included on the list below have been approved by the faculty as general education electives. Any course not on this list must be approved through the major department prior to enrollment in the course. Where such phrases as “any psychology course” are used, special topics courses in that area are specifically excluded since the content is variable. Students should seek approval from their advisor prior to enrollment in such special topics courses.

Engineering Practice in a Global/Special Context Cluster


Contemporary Issues Cluster

African and African-American Studies 202, 343, 364, 420, 429, 442, 473, 480, 483; Agriculture and Natural Resources 333; American Studies 343, 345, 420; Anthropology 130, 320; Business Law 301; Child and Family Studies 220, 240, 320, 420; Communication 100, 150; Geography 351; Geology 201, 202; History 320, 346, 442, 446, 455; Nursing 400; Philosophy 110, 111, 240, 242, 290, 342, 344, 345, 346, 360, 382, 390; Planning 401; Political Science 311, 350, 451, 463; Religious Studies 319; Sociology 110, 340, 343, 344, 345, 360, 375, 414, 415, 442, 446, 451, 459, 462, 464, 465; Speech Communication 469; University Studies 311, 322; Women’s Studies 220, 230, 310, 340, 360, 375.

Multi-disciplinary Teams Cluster

Counselor Education 206, 306; Psychology 360, 409, 440; Sociology 320; Speech Communication 220, 230, 240, 300, 310, 320, 330, 420.

Professional and Ethical Responsibility Cluster

Philosophy 240, 242, 342, 344, 345, 346; Religious Studies 344, 345; University Studies 322.

Effective Communications Cluster

English 263, 295, 355, 360, 455; Information Sciences 450; Journalism 450, 456; Speech Communication 210, 220; Theatre 220, 221. Any sequence of foreign language courses.

Life-Long Learning Cluster

Philosophy 110, 111; Psychology 310.

Aesthetics in Design Cluster


Humanities Cluster

Any British or American literature course. Any foreign language literature course including those using English translations. Any course from History, Philosophy, Medieval Studies or Religious Studies. Asian Languages 311, 312, 313, 314; Cinema Studies 281, 323, 325, 334, 420, 421, 433, 465; Classics 222, 222, 223; Comparative Literature 202, 203; Women’s Studies 210, 215, 320, 383.

Arts Cluster

Architecture 111; Art History 172, 173, 183; Classics 232, 233; English 263, 363; Music; Music History 110, 115, 120, 125, 290, 310, 330, 340, 341, 380; Philosophy 350, 353; Theatre 100, 220*. *Courses involving skill development in the arts (Art 191, Theatre 220 or music courses that includes vocal or instrumental performance) may be used as General Education Electives up to a maximum of 3 semester hours.

Multicultural Studies Cluster


Social Sciences Cluster


American History Requirement

Engineering students, regardless of national origin, must fulfill the American history requirement described elsewhere in this catalog. Those students who have not had the required year of American history in high school may choose the required six semester hours from History 221 and 222, or other courses deemed suitable by the Department of History. These hours may be counted as part of the required block of humanities and social science electives.
Technical Electives

Technical electives are to be selected with the advice and approval of the student’s major department. In some of the curricula tabulations a choice of such electives is indicated, and regulations in regard to their selection are stated.

The Voluntary ROTC Program

Engineering students may participate in the ROTC Program. Advanced ROTC courses (300 and 400 series) may be counted as technical elective credit toward an engineering degree up to a total of six (6) semester hours. Normally, Military Science and Leadership courses cannot be used as humanities/social science electives. Individual departments determine the appropriate substitutions.

Approval of Electives and Substitutions

Each student shall discuss with an advisor the status of the program of study no later than the beginning of the second semester prior to anticipated graduation. Any necessary additions to or substitutions in the program, or electives requiring special approval, must be cleared in writing at that time, and it is each student’s responsibility to see that all necessary approvals are secured. Inattention to such matters will most likely delay graduation.

Curricula

Course requirements for the various engineering curricula are listed with each department. The numbers in the columns indicate the number of semester hours of credit for each course. Individual course prerequisites should be strictly adhered to, even if courses are not taken in the semester indicated. Although the requirements for each degree can be completed in four academic years (five for the cooperative program), the quality of the learning experience is much more important than the speed with which the curricula are completed.

Questions about individual courses should be directed to the department responsible for the course; questions about a particular curriculum should be directed to the major department.

Prerequisites

Before registering for any engineering course, a student should make certain that any necessary background work has been completed. In addition to specific prerequisites listed, it is assumed that a student taking sophomore engineering courses has completed all freshman courses, whether specifically listed as a prerequisite or not. When this is not the case, a student should seek advice from the advisor or department responsible for the course in question before registration so as to minimize the chances of academic difficulty. Students who do not have prescribed prerequisites may be dropped from a course at any time during a semester when the lack of prerequisites is discovered.

ENGINEERING FUNDAMENTALS DIVISION

Professors

J.R. Parsons (Mechanical, Aerospace and Biomedical Engineering), Director; R.M. Bennett (Civil and Environmental Engineering); J.H. Forrester (Mechanical, Aerospace and Biomedical Engineering)
Assistant Professors
D.J. Keffer, Ph.D. Minnesota

Emeriti Faculty
J.M. Holmes, Ph.D. Tennessee; J.W. Prados, Ph.D. Tennessee

Bachelor of Science Program

Chemical engineering deals with the development, design, operation, and management of plants and processes for economical, safe conversion of chemical raw materials to useful products. It is a broadly based discipline with heavy emphasis on chemistry and mathematics, with supporting study in areas such as physics, materials, and humanities.

Chemical engineering graduates of The University of Tennessee possess the knowledge base, intellectual skills, and professional commitment that prepare them for innovative technical leadership, graduate study, productive service to society, and continued professional growth through lifelong learning. Preparation is based in the learning objectives identified below, regular evaluation of the achievement of these objectives, and use of evaluation results to improve the educational process.

Technical Knowledge Base: Graduates of The University of Tennessee chemical engineering program demonstrate the ability to apply knowledge of mathematics, chemistry, other sciences, and engineering to identify and solve problems dealing with material and energy balances applied to chemical processes; thermodynamics of physical and chemical equilibria; heat, mass, and momentum transfer; continuous and stagewise separation operations; chemical kinetics and reactors; and process dynamics and control.

Analytical Skills: Graduates of The University of Tennessee chemical engineering program demonstrate the ability to apply the following analytical skills in the solution of engineering problems: differential and integral calculus, ordinary differential equations, linear algebra, statistical methods, and numerical methods.

Problem Formulation and Solution Skills: Graduates of The University of Tennessee chemical engineering program demonstrate the ability to formulate a technical problem in terms that permit a solution, identify the appropriate tools to address a technical problem, make simplifying assumptions required to allow a solution with an appropriate level of rigor, identify and collect information needed to obtain the solution, and evaluate the reasonableness of the solution.

Experimental Skills: Graduates of The University of Tennessee chemical engineering program demonstrate the ability to plan experiments to meet specified objectives, conduct such experiments carefully and safely, and analyze and interpret experimental data in terms of process models.

Information Technology Skills: Graduates of The University of Tennessee chemical engineering program demonstrate the ability to apply computer skills in engineering problem solving. These include computation, communication, and data acquisition skills that keep pace with evolving technology.

Process Design and Synthesis Skills: Graduates of The University of Tennessee chemical engineering program demonstrate the ability to formulate and solve open-ended problems that require evaluation of alternatives with respect to specified criteria; size equipment to meet process objectives; apply the principles of engineering economics to estimate capital investment and operating costs for specified process equipment and systems; develop an appropriate flowsheet to meet a process objective; calculate the material and energy balances for a given process flowsheet; employ computer-based process design tools and techniques; optimize the design of a conceptual process with respect to specified criteria that include safety, environmental impact, operability, and economics; and analyze and compare alternative designs.

Communication Skills: Graduates of The University of Tennessee chemical engineering program demonstrate the ability to communicate effectively in writing, speaking, and listening in a variety of contexts. Specific skills include the ability to write effective reports, experimental procedures, memoranda, and similar documents; make effective oral presentations and critique presentations by others; prepare and use appropriate visual representations effectively in both written and oral presentations; and critically evaluate technical material presented in lectures and seminars.

Teamwork Skills: Graduates of The University of Tennessee chemical engineering program demonstrate the ability to function as effective team members and leaders. This includes the ability to work effectively with other team members; employ appropriate team facilitation procedures as needed; organize and lead a team effort; and contribute individual expertise in achieving team goals.

Lifelong Learning Skills: Graduates of The University of Tennessee chemical engineering program recognize the need for and are able to engage in lifelong learning. Students will have the ability to obtain needed information from libraries and electronic data bases; the ability to use the Internet as an effective communication and research tool; the ability to use distance learning media to independently complete required assignments; and familiarity with lifelong learning resources available through professional societies.

Professional Commitment: Graduates of The University of Tennessee chemical engineering program demonstrate high standards of professional and ethical responsibility. Students are required to take a course preparing them for the Fundamentals of Engineering examination, receiving a grade based on their performance on a “mock Fundamentals of Engineering examination,” and are strongly encouraged to pursue the path to registration as Professional Engineers.

Safety, Health, and Environmental Protection: Graduates of The University of Tennessee chemical engineering program demonstrate an understanding of chemical process safety, including occupational safety and health and minimization of adverse environmental impact.

Understanding of the Global and Societal Impact of Engineering: Graduates of The University of Tennessee chemical engineering program demonstrate an understanding of chemical process safety, including occupational safety and health and minimization of adverse environmental impact.

Appreciation of the Cultural Heritage: Graduates of The University of Tennessee chemical engineering program demonstrate an appreciation for human cultural heritage.

The curriculum provides a central core of required courses with flexibility in the upper-division years to permit emphasis on preparation for graduate school or professional employment.

Departmental Graduation Requirements

To graduate in chemical engineering, students must complete the published curriculum with a grade of C or better in all required chemical engineering courses.

A minimum of 18 semester hours of general education courses are required. These courses must meet the college general education requirements listed under “Curricula in Engineering.” A 3 semester-hour technical writing course must be included in the general education electives.
Honors Program

The Honors program encourages highly motivated students to experience a more rigorous preparation in chemical engineering. Admission is selective. Application to the honors program is made when the student applies for upper division status. Honors requirements are: credit for 3 of the 4 honors seminars (ChE 307, 308, 407, and 408), ChE 447, one of ChE 467, 477, 488 or 498 as a technical elective and Chem 483 as a Chem option. Students interested in the honors program should consult the department’s Honors coordinator.

Progression to Upper Division

Progression of chemical engineering students to departmental upper-division courses is competitive and is based on capacity. Factors considered include overall grade point average, performance in selected lower division courses and evidence of satisfactory and orderly progress through the prescribed curriculum.

Upper-Division Status

A lower-division student may apply for progression to Upper-Division Status after completing ChE 200, 230, 240, and 250 with a grade of C or better in each course and an overall GPA of 2.5 or better.

Provisional Status

Students who have completed ChE 200, 230, 240, and 250 with an overall GPA of at least 2.1 may apply for provisional status. The granting of Provisional Upper-Division Status is based on the availability of space in the departmental programs after Upper-Division Status students have been accommodated. Provisional students are required to demonstrate the ability to perform satisfactorily in upper division courses by completing a total of seven departmental courses with a grade of C or better in each course (including the four required for Upper-Division Status). Permission to continue with upper-division classes depends on this minimum level of performance.

Any student with an overall GPA below 2.1 will not be admitted to upper division Chemical Engineering courses. Students who have not been admitted to Upper-Division or Provisional Status will be dropped from upper-division departmental class rolls.

Transfer Students

The upper-division level students are admitted on a Provisional Status basis only.

CHEMICAL ENGINEERING MAJOR

Requirements for Bachelor of Science in Chemical Engineering

<table>
<thead>
<tr>
<th>Freshman</th>
<th>Hours Credit</th>
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<tbody>
<tr>
<td>English 101,102</td>
<td>6</td>
</tr>
<tr>
<td>Chemistry 120,130</td>
<td>8</td>
</tr>
<tr>
<td>Mathematics 141,142</td>
<td>8</td>
</tr>
<tr>
<td>Engineering Fundamentals 101,102</td>
<td>12</td>
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<table>
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<tr>
<th>Sophomore</th>
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<tbody>
<tr>
<td>Chemical Engineering 200, 230, 240, 250</td>
<td>14</td>
</tr>
<tr>
<td>Chemistry 310-319</td>
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</tr>
<tr>
<td>Materials Science and Engineering 201</td>
<td>3</td>
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<tr>
<td>Mathematics 200, 231, 241</td>
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<tr>
<td>General Education Electives</td>
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<tr>
<th>Junior</th>
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<tbody>
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<td>Chemical Engineering 301, 310, 340, 360,380</td>
<td>14</td>
</tr>
<tr>
<td>Physics 231</td>
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<tr>
<td>Chemistry Option</td>
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<tr>
<td>Chemistry 350</td>
<td>3</td>
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<tr>
<td>Chemistry 320, 360, or 483</td>
<td>3</td>
</tr>
<tr>
<td>General Education Elective</td>
<td>3</td>
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<tr>
<td>Technical Writing Elective</td>
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<tr>
<th>Senior</th>
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</thead>
<tbody>
<tr>
<td>Chemical Engineering 401, 410,445, 450, 480, 488 or 490</td>
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<tr>
<td>Technical Electives</td>
<td>9</td>
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<tr>
<td>General Education Electives</td>
<td>6</td>
</tr>
</tbody>
</table>

Total 133
foster strong bonds of faculty-student interaction through seminars, extracurricular activities, personal advising and consultation.

To ensure that students have exposure to the practice of Civil Engineering, the department strives: to provide cooperative education and internships; to encourage professional society participation; to consult an external advisory board of practitioners to assist with the development of the curriculum; to provide a senior design project including meaningful engineering design experiences; to maintain national engineering accreditation; and to maintain a high passing rate on the first professional licensing examination.

The department strives to ensure graduates will compete favorably in the marketplace for opportunities in the practice of civil engineering and/or graduate education by: providing professional courses to achieve proficiency in the five areas listed in the mission statement; fostering an appreciation for professional development and life-long learning; providing an undergraduate education recognized for its excellence both statewide and nationally; and providing professional development opportunities consistent with current engineering practice.

The curriculum in Civil Engineering provides training in fundamental engineering sciences and in basic subjects in related fields. Technical electives are available in construction, environmental engineering, geotechnical, material, structures, transportation, or water resources.

Students are required to maintain a cumulative grade point of at least 2.00 in all Civil Engineering and Environmental Engineering courses taken at The University of Tennessee and used to satisfy the graduation requirements. No more than six hours of Civil and Environmental Engineering courses in which a D is the highest grade earned may be counted toward graduation.

Electives

Electives are chosen to meet student career objectives and program accreditation requirements. Students must consult with their advisor and have their selections pre-approved. A student must have a GPA of 2.75 or higher or approval of the instructor to take 500-level courses for undergraduate credit.

CIVIL ENGINEERING MAJOR

Requirements for the Bachelor of Science in Civil Engineering

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
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<tbody>
<tr>
<td>English 101,102</td>
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<tr>
<td>Chemistry 120,130</td>
<td>8</td>
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<tr>
<td>Mathematics 141,142</td>
<td>8</td>
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<tr>
<td>Engineering Fundamentals 101,102</td>
<td>12</td>
</tr>
<tr>
<td>Sophomore</td>
<td></td>
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<tr>
<td>Mathematics 231, 241, 251</td>
<td>10</td>
</tr>
<tr>
<td>Physics 231</td>
<td>3</td>
</tr>
<tr>
<td>Statistics 251</td>
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<tr>
<td>Nuclear Engineering 203</td>
<td>3</td>
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<tr>
<td>Civil Engineering 205, 210, 261</td>
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<tr>
<td>1General Education Electives</td>
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<tr>
<td>Junior</td>
<td></td>
</tr>
<tr>
<td>Civil Engineering 321, 351, 361, 390</td>
<td>13</td>
</tr>
<tr>
<td>Civil Engineering 305, 330, 352, 380, 395</td>
<td>14</td>
</tr>
<tr>
<td>1General Education Electives</td>
<td>6</td>
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</tbody>
</table>

1See College list of approved courses. All electives must be pre-approved by the advisor and department head.

Minor in Environmental Engineering

The College of Engineering offers a minor in Environmental Engineering to those undergraduate students whose academic history provides the prerequisites for the courses required by the minor. The minor requires the completion of a minimum of 21 credits in course work which builds the foundation of an environmental engineering perspective. Some of the courses used in the minor may also satisfy a requirement for a major. Students are advised that the first professional degree in Environmental Engineering at the University of Tennessee is the M.S. in Environmental Engineering which builds on the minor. Students are asked to file their intent to complete the Minor with the office of the Department of Civil and Environmental Engineering, 223 Perkins Hall. The student’s home department advisor will then be supplied with the information about the minor requirements to assist with prerequisite sequencing. A copy will be filed with undergraduate records so the minor, once completed, will be shown on the student’s transcript.


Department of ELECTRICAL AND COMPUTER ENGINEERING

Professors

W.S. El Ghazaly, (Head), Ph.D. Texas (Austin); M. Abidi (Weston Fulton Professor), Ph.D. Tennessee; J.D. Birdwell, Ph.D. Massachusetts Institute of Technology; B.W. Bomer (UTSI), Ph.D. Tennessee; D.W. Bouldin, Ph.D. Vanderbilt; M.O. Pace, Ph.D. Georgia Institute of Technology; J.S. Lawler, Ph.D. Michigan State; A. Pujol (UTSI), Ph.D. Vanderbilt; M.J. Roberts, Ph.D. Tennessee; J.R. Roth (Weston Fulton Professor), Ph.D. Cornell

Associate Professors

P.B. Crilly, Ph.D. New Mexico State; S.K. Islam, Ph.D. Connecticut; D.B. Koch, Ph.D. Missouri-Rolla; L.M. Smith (UTSI), Ph.D. Tennessee

Assistant Professors

B.J. Blalock, Ph.D. Georgia Tech; J.N. Chiasson, Ph.D. Minnesota; M.M.K. Howlader, Ph.D. Virginia Polytechnic Institute; M. Ferdjallah, Ph.D. Texas (Austin); S.G. Kong, Ph.D. UCLA; G.D. Peterson, Ph.D. Washington University; H. Qi, Ph.D. North Carolina State; P. W. Smith, Ph.D. Virginia; L.M. Tolbert, Ph.D. Georgia Institute of Technology
The Bachelor of Science degree programs are based on a series of integrated courses. Students advance through the program in a sequential manner guided by prerequisite and co-requisite courses in the showcase curriculum. This integrated sequentially developed program is highlighted by the systematic inclusion of the design process introduced in the sophomore year.

**Program Educational Objectives**

The program educational objectives of the Electrical and Computer Engineering programs include:

1. An understanding of the engineering sciences necessary to analyze and design complex devices and systems containing hardware and software components;
2. A progression of design projects and tasks throughout the program;
3. An understanding of probability and statistics, including applications, and discrete math;
4. An understanding of mathematics through differential and integral calculus;
5. An understanding of the basic sciences including chemistry and physics;
6. An understanding of advanced mathematics in the areas of differential equations, numerical analysis, linear algebra, and advanced calculus;
7. An orderly student progression through the program; and
8. Achievement of the objectives of the thirteen program outcomes.

**Program Outcomes**

In addition to the eleven program outcomes listed in the College of Engineering section on National Accreditation, electrical and computer engineering program outcomes also include:

- Experience in using organizational skills in team management and negotiation;
- Ability to use creative and technical skills in analytical problem solving in the discipline and other engineering related fields. Both Electrical and Computer Engineering programs are under continuous assessment and improvement based on Engineering Criteria 2000. The Advisory Committee to the department, which is made up of persons from industry, government, higher education, students and recent graduates, and faculty, provides constituent input for setting program educational objectives and outcomes and establishing the requisite assessment modes for the program.

**General**

The courses of study for the Bachelor of Science degree in Electrical Engineering and Bachelor of Science degree in Computer Engineering are structured to provide a foundation in both the basic sciences and the specialized areas of their respective discipline. The programs also have sufficient general education electives to enhance the cultural growth of the student and develop professionals with a strong social awareness. The faculty seeks to keep classes small enough to allow effective interaction with students.

The selection of general education elective courses is left to each student but must be made in accordance with established College of Engineering Policy. Students are required to satisfy the following general education cluster distribution requirements:

- Engineering in a Global/Societal Context cluster (1 course);
- Contemporary Issues cluster (1 course);
- Humanities/Arts cluster (2 courses);
- Multicultural cluster (1 course); and
- Social Sciences cluster (1 course), and Professional and Ethical Responsibility cluster (1 course), and Effective Communications cluster (1 course).

Generally, all sophomore and junior level courses taught in the department are taught at least twice per year. Senior level courses are normally offered in either the fall or spring semester. Courses for which a senior course is a prerequisite will be normally offered in the spring semester with the prerequisite senior course being offered in the fall semester. In all courses which have prerequisites indicated, the prerequisite must be completed prior to enrollment in the course. This scheduling arrangement allows for flexibility, since the student may elect the normal four-year schedule, an accelerated schedule, or choose to participate in the Cooperative Engineering Program.

The Electrical and Computer Engineering Department maintains a number of laboratory facilities to support the undergraduate teaching program. The laboratories are devoted specifically to circuits and systems, communications, computer networks, digital systems, electronics, image processing, machinery, machines, and power electronics and drives. Microcomputer and personal computer facilities are provided within the department.

**COMPUTER ENGINEERING MAJOR**

Students in the junior and senior years may choose from a wide spectrum of courses covering various aspects of electrical and computer engineering, computer science, and related fields. Students must meet the design, depth, and breadth requirements in the department in their selection of these courses. Students are encouraged to discuss an appropriate senior program with their advisors.

To be eligible for the Bachelor of Science degree in Computer Engineering, a student must achieve a cumulative grade point average of at least 2.0 in all Electrical and Computer Engineering courses taken at The University of Tennessee. At least 30 hours of upper-division courses in Electrical and Computer Engineering, and Computer Science must be earned at The University of Tennessee.

**Requirements for the Bachelor of Science in Computer Engineering**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Credit</th>
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<tbody>
<tr>
<td>English 101,102</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>Chemistry 120,130</td>
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<td>8</td>
</tr>
<tr>
<td>Mathematics 141,142</td>
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<tr>
<td>Engineering Fundamentals 101,102</td>
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</table>
Students in the senior year may choose from a wide spectrum of courses covering all aspects of Electrical and Computer Engineering. Students must meet the design, depth, and breadth requirements of the department in their selection of these courses. The design requirement is met through a major engineering design experience in Electrical and Computer Engineering, Senior Design, and through the design process being integrated into specified courses throughout the program. The depth requirement is met by taking two courses in one of the five core areas of communications, computers, electronics, power, and systems. The breadth requirement is met by taking courses in other core areas, or courses in computer vision, power electronics, and emerging technologies. Students are encouraged to discuss an appropriate senior program with their advisors.

To be eligible for the Bachelor of Science degree in Electrical Engineering, a student must achieve a cumulative grade point average of at least 2.0 in all Electrical and Computer Engineering courses taken at The University of Tennessee. At least 30 hours of upper-division Electrical and Computer Engineering courses, including Electrical and Computer Engineering 400, and courses to meet the depth, and breadth requirements of the department must be earned at The University of Tennessee.

## Requirements for Bachelor of Science in Electrical Engineering

### Freshman

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
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<tbody>
<tr>
<td>English 101,102</td>
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<tr>
<td>Chemistry 120,130</td>
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<tr>
<td>Mathematics 141,142</td>
<td>8</td>
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<tr>
<td>Engineering Fundamentals 101, 102</td>
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### Sophomore

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<tr>
<th>Course</th>
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<tbody>
<tr>
<td>Mathematics 231, 241, 251</td>
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<tr>
<td>Physics 231, 232</td>
<td>7</td>
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<tr>
<td>Electrical and Computer Engineering 206, 255</td>
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<tr>
<td>Electrical and Computer Engineering 300</td>
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<td>General Education Electives</td>
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### Junior

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>Electrical and Computer Engineering 315, 335</td>
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</tr>
<tr>
<td>Computer Science 302, 360</td>
<td>6</td>
</tr>
<tr>
<td>Mathematics 300</td>
<td>3</td>
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<tr>
<td>Electrical and Computer Engineering 316, 342, 355</td>
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<tr>
<td>General Education Electives</td>
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### Senior

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
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</thead>
<tbody>
<tr>
<td>Electrical and Computer Engineering 451, 452</td>
<td>7</td>
</tr>
<tr>
<td>Computer Engineering Senior Electives</td>
<td>12</td>
</tr>
<tr>
<td>General Education Electives</td>
<td>12</td>
</tr>
</tbody>
</table>

**Total:** 131

1. At least one course from the Professional and Ethical Responsibility Cluster, and at least one course from the Effective Communications Cluster.
2. At least two of the CpE Senior Electives must be Electrical and Computer Engineering courses. At most, one CpE Senior Elective can be from any 300-level Electrical and Computer Engineering courses. Approved CpE Senior Electives are: Electrical and Computer Engineering 325, 336, 341, 411, 422, 423, 431, 432, 441, 443, 446, 471, 472, 481, 482, 494, Electrical and Computer Engineering 453, Computer Science 370, 420, 460, 470, 494; Industrial Engineering 405, English 360.

## Bachelor of Science Program

Engineering physicists typically work in areas of applied science and emerging technology in which standard engineering practices are rapidly evolving to keep pace with advances in science; they are often involved in developing new engineering methods and principles. The goal of the Engineering Physics B.S. program is to prepare its students to apply the principles and problem-solving approaches of physics to the solution of engineering problems at the frontiers between science and technology, by:

1. providing students with a thorough knowledge of mathematics, science, and engineering science with an emphasis on the principles of physics and of the derived physical, chemical, and biological sciences as appropriate to individual career goals;
2. training students in the communication, team cooperation, and problem identification and solving skills needed to practice engineering art in the modern world;
3. preparing students through example and experience to apply theories and skills to the design and conduct of experiments, to the analysis and interpretation of measured results, and to the design of components, systems, and structures that meet specific, identified needs; and
4. instilling in students understanding and appreciation of the cultural, historical, societal, economic, and environmental contexts in which problems of engineering and science arise, and to promote commitment to seek solutions which achieve appropriate balance of cultural, social, and technical value.

The program in Engineering Physics is designed to fulfill the educational requirements for professional work in various fields of applied science which are based upon a thorough knowledge of physics. The first two years of the curriculum are concerned with fundamental courses in engineering, science, mathematics, and general education. In the upper division, the curriculum allows some choice of courses in engineering and in physics depending on the interest and career goals of the student. The undergraduate program is a complete, professional program, equipping the student for entry into a variety of work in industry and research. The program also leads to graduate work in either physics or engineering.
The industrial engineering profession focused on manufacturing. Today’s industrial engineer will be involved in the design of systems and processes to produce and deliver goods and services not only in manufacturing, but also in the service industries and government sectors of the economy. Today’s industrial engineer is concerned with the design of integrated systems involving people, materials, finances, equipment, processes, energy, and information, so that the overall system functions efficiently and human needs are adequately met. Industrial engineering is distinctive in two respects: the industrial engineer typically works on problems or systems which include human beings as a major variable; and the industrial engineer is by definition a systems engineer, whose unique combination of skills can be applied to many working environments.

It is this emphasis on people, science, and technology that distinguishes Industrial Engineering from the other engineering disciplines. The industrial engineer’s objective is to achieve the best possible results for the benefit of humankind, in terms of safety, quality, and productivity. Industrial engineers create value through a total systems approach, scientific method, engineering design, and integration of new technologies. In common with all engineering disciplines, industrial engineering is based on mathematics and the physical sciences. However, Industrial Engineering also emphasizes the life sciences and social sciences. This concern for the human element leads to system designs that enhance the quality of life for all people, both as producers and consumers of products and services.

Career choices for industrial engineers range from retail distribution, banking, health-care delivery, corporate management, municipal management, aerospace systems, research groups, government employment as well as manufacturing. In all areas of manufacturing, service, and government, there is increasing emphasis on the goal of improving quality and productivity. Industrial engineers work closely with the top management in these sectors to achieve this goal.

Industrial engineering graduates possess the knowledge, technical skills, and professionalism for their entry into industry or graduate study. They are prepared for life long learning and for service to society. Many will achieve prominent roles in management.

Students majoring in industrial engineering are eligible to participate in the Engineering Cooperative program and other student activities in the College of Engineering. Industrial Engineering majors interested in the Cooperative Engineering program should visit Office of Cooperative Engineering or consult with their faculty advisor.

NOTE: Any 400-level course required in the Bachelor of Science in Industrial Engineering program at The University of Tennessee may not be used for graduate credit in the M.S. degree program.

**Goals**

The goals of the Industrial Engineering undergraduate program are to prepare students to contribute to the profession of industrial engineering and to prepare them for further study, including professional and graduate education.

**Objectives**

The objectives of the Industrial Engineering Program include enabling the students to obtain:

1. An understanding of fundamental engineering principles, mathematics, science, and statistics.
2. An understanding of and an ability to apply the following concepts to the multi-faceted problems associated with the production of, maintenance, and delivery of goods and services: fundamental human factors which influence engineering design, the economic analysis of alternative design choices,
introductory economics and accounting, quality control techniques, manufacturing processes and materials, production and inventory system design and control, the mathematical modeling and simulation of complex systems, and the design and installation of information acquisition and control systems.

3. An ability to communicate effectively, both orally and in writing, to function on multi-disciplinary teams, to have a knowledge of pertinent contemporary issues, and to recognize the need for a commitment to life-long learning.

This curriculum emphasizes the knowledge and skills necessary to design integrated systems of people, materials, equipment and energy, such that the overall systems functions at an optimal level and such that the needs of human components of the system are met. The solid, broad base in engineering, combined with education in applying engineering methodology to traditionally non-engineering problem areas as provided through the Industrial Engineering curriculum, leads to participation by industrial engineers in an unlimited range of fields; including, among others, retail distribution, banking, health care delivery, corporate management, municipal management, food industry, as well as traditional areas of manufacturing.

Outcomes

The eleven program outcomes listed in the College of Engineering section on National Accreditation are the accepted outcomes of the Industrial Engineering Department.

The University of Tennessee General Education Requirements

General Education Electives must include two English electives, with one of the English electives being chosen from the Industrial Engineering Department list of approved communications skills courses, in addition to the requirements described under Approved General Education Electives.

IN D U S T R I A L E N G I N E E R I N G M A J O R

Requirements for the Bachelor of Science in Industrial Engineering

<table>
<thead>
<tr>
<th>Freshman</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>English 101, 102</td>
<td>6</td>
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<tr>
<td>Chemistry 120, 130</td>
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<tr>
<td>Mathematics 141, 142</td>
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<tr>
<td>Engineering Fundamentals 101, 102</td>
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<td>Sophomore</td>
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<tr>
<td>English Electives</td>
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<td>Mathematics 200, 231, 241</td>
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</tr>
<tr>
<td>Physics 231</td>
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<tr>
<td>Mechanical Engineering 231</td>
<td>3</td>
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<td>Industrial Engineering 202</td>
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</tr>
<tr>
<td>Accounting 201</td>
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<td></td>
</tr>
<tr>
<td>Statistics 251</td>
<td>3</td>
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<tr>
<td>Materials Science and Engineering 201</td>
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<tr>
<td>Junior</td>
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<tr>
<td>Electrical and Computer Engineering 301</td>
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<td>Industrial Engineering 300, 301, 304, 310, 330</td>
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<td>Economics 201</td>
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<tr>
<td>Nuclear Engineering 203</td>
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<td></td>
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<tr>
<td>Nuclear Engineering 342</td>
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<td></td>
</tr>
</tbody>
</table>

1 General Education Elective

Total: 132

Bachelor of Science Program

Materials Science and Engineering is concerned with the science and technology needed to develop and apply materials for the benefit of society. The undergraduate program is designed to prepare students to undertake materials science and engineering careers or to enter graduate programs in this or related disciplines. In order to accomplish this overall goal, the specific educational objectives of the program for the degree of Bachelor of Science in Materials Science and Engineering are:

1. To provide students with a knowledge of the fundamentals of appropriate physical and chemical sciences, mathematics, and engineering sciences, and to demonstrate the applications of these principles to solve engineering problems with an emphasis on the materials processing, structure, properties, and performance. This knowledge base includes the development of analytical and experimental skills.

2. To provide students with experiences in design and materials selection such that they can design components, systems, or processes with consideration of economic, safety, environmental, and social issues.

3. To develop professional skills in such areas as written and oral communication, problem-solving, and working in diverse
teams that prepare graduates to practice materials engineering in contemporary and global environs.

4. To provide students with a general education component that compliments the technical content, for the appreciation of cultural and social values, for understanding the impact of engineering solutions on society, and for personal development.

The field of Materials Science and Engineering is quite broad, encompassing metallic, ceramic, and polymeric materials, as well as composites made from combinations of materials. Consequently, the curriculum contains a central core of courses that are applicable to all materials types with flexibility in the upper division years to permit concentration and in-depth coverage of specific materials categories. By judicious choice of electives the student may get a broad perspective or may develop a specialty area.

A minimum of 18 semester-hours of general education courses are required by all engineering degree programs in order to meet The University of Tennessee general education goals, as discussed above. The major in Materials Science and Engineering specifically requires that Economics 201 and one course from the Effective Communication Cluster be included as a part of this group.

Graduation in Materials Science and Engineering requires a minimum grade point average of 2.00 for all departmental courses.

**Progression to Upper-Division Programs**

Progression of students to departmental Upper-Division courses is competitive. Factors considered include overall grade point average, performance in selected lower-division courses and evidence of satisfactory and orderly progress through the prescribed curriculum.

**Upper-Division Status**

A Lower-Division student formally applies for Upper-Division Status after completing 50 semester hours of Lower-Division engineering curriculum course work with an overall GPA of at least 2.4. This must include Materials Science and Engineering 201.

**Provisional Status**

Students who have completed 50 semester hours of Lower-Division engineering curriculum course work with an overall GPA between 2.0 and 2.4 may apply for provisional status. The granting of Provisional Upper-Division Status is based on the availability of space in the departmental programs after Upper-Division Status students have been accommodated. Provisional students are required to demonstrate their ability to perform satisfactorily in upper-division courses by obtaining a minimum GPA of 2.0 in at least 8 hours of 300-level required courses specified by the department. Further progression to upper-division courses is dependent upon this minimum level of performance.

**Transfer Students**

At the Upper-Division level students are admitted on a Provisional Status basis only. Any student presenting more than 28 hours of Lower-Division engineering curriculum course work by transfer credit is considered to be a transfer student.

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### MATERIALS SCIENCE AND ENGINEERING MAJOR

**Requirements for the Degree of Bachelor of Science in Materials Science and Engineering**

<table>
<thead>
<tr>
<th>Year</th>
<th>Courses</th>
<th>Hours</th>
<th>Credit</th>
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</thead>
<tbody>
<tr>
<td><strong>Freshman</strong></td>
<td>English 101,102</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>Chemistry 120,130</td>
<td></td>
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<td></td>
<td>Mathematics 141,142</td>
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<tr>
<td></td>
<td>Engineering Fundamentals 101,102</td>
<td></td>
<td>12</td>
</tr>
<tr>
<td><strong>Sophomore</strong></td>
<td>Materials Science and Engineering 201, 290, 291</td>
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<td>6</td>
</tr>
<tr>
<td></td>
<td>Physics 231, 232</td>
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<td></td>
<td>Mathematics 200, 231, 241</td>
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<td>Chemical Engineering 200,240</td>
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<td></td>
<td>General Education Electives</td>
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<td>6</td>
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<tr>
<td><strong>Junior</strong></td>
<td>Materials Science and Engineering 290, 291, 300, 301, 302, 304, 320, 340, 360</td>
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</tr>
<tr>
<td></td>
<td>Chemistry 473</td>
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</tr>
<tr>
<td></td>
<td>Electrical and Computer Engineering 301</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Mechanical Engineering 321</td>
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</tr>
<tr>
<td></td>
<td>General Education Electives</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td><strong>Senior</strong></td>
<td>Materials Science and Engineering 290, 291, 380, 402, 405, 410, 421, 489</td>
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<td>20</td>
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<td></td>
<td>Materials Science and Engineering Elective</td>
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<tr>
<td></td>
<td>Technical Elective</td>
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</tr>
<tr>
<td></td>
<td>General Education Electives</td>
<td></td>
<td>6</td>
</tr>
</tbody>
</table>

Total 133

1. General Education courses must include Economics 201 and one course from the Effective Communications Cluster in addition to the requirements described under Approved General Education Electives.


3. Students must enroll in 290 and 291 every year beginning with the sophomore year.

**Minor in Materials Science and Engineering**

A minor in Materials Science and Engineering is offered through the College of Engineering to those undergraduate students who have met the prerequisites for the courses required by the minor. The minor requires completion of a minimum of 18 semester hours in course work which develops a foundation in Materials Science and Engineering and allows concentration in Materials Science and Engineering areas to be selected by the students (e.g., metallurgy, polymers, ceramics, composites, or electronic materials). Some of the courses used for the Materials Science and Engineering minor may also satisfy requirements for the student’s major.

Students may enroll in the minor program by completing a form at the office of the Department of Materials Science and Engineering, 434 Dougherty Engineering Building. A copy of the completed enrollment form and information on the minor requirements will be forwarded to the student’s home department advisor. A copy of the form also will be filed with the Office of the University Registrar so that, upon completion, the minor will be shown on the student’s transcript.

**Course Requirements:** Required courses: Materials Science and Engineering 201 and 380. Choose at least one: Materials Science and Engineering 340, 360, 402, 410, and 472. Choose at least three, at least one of which must be at the 400-level: Any of the Materials Science and Engineering 300-400 courses; Biomedical Engineering 310, 408, 455, 469, 473 and 475; Civil and Environmental Engineering 321 and 421; Chemical...
Engineering 230, 301, 447 and 484; Electrical & Computer Engineering 335; Industrial Engineering 330, 401, and 484; Mechanical Engineering 321, 366, 466 and 484; Nuclear Engineering 484; Chemistry 350, 360, 369, 430, 439, 450, 473, 483, 479, 489 and 490; Physics 342, 411, 412, 421, 431 and 432; Other courses in this category may be acceptable, but must be approved in advance by the Department of Materials Science and Engineering.

**Department of MECHANICAL, AEROSPACE, AND BIOMEDICAL ENGINEERING**

**http://www.engr.utk.edu/mabe/**

**Professors**
- T.E. Shannon (Acting Head), Ph.D. Tennessee, P.E.;
- M. Keyhani, Ph.D. Ohio State; R.D. Komistek, Ph.D. Memphis; R.J. Krane, Ph.D. Oklahoma; J.D. Landes, Ph.D. Lehigh, P.E.; M.W. Milligan, Ph.D. Tennessee, P.E.; M. Parang, Ph.D. Oklahoma;
- J.R. Parsons, Ph.D. North Carolina State, P.E.;
- GV Smith, Ph.D. Pennsylvania State, P.E.;
- O. Soliman, Ph.D. Tennessee, P.E.;
- F.H. Speckhart (IBM Professor), Ph.D. Georgia Institute of Technology, P.E.;
- J.F. Wasserman, Ph.D. Cincinnati, P.E.; Y.J. Weitsman, Ph.D. Rensselaer

**Associate Professors**
- J.A.M. Boulet, Ph.D. Stanford; J.S. Freeman, Ph.D. Wisconsin;
- W.R. Hamel, Ph.D. Tennessee; G.S. Ilanelli, Ph.D. Tennessee;
- M. Karsa, Ph.D. Ecole Polytechnique (Canada); A. Lumsdaine, Ph.D. Michigan; J.E. Lyne, M.D.; Ph.D. North Carolina State;
- M.S. Madhukar, Ph.D. Drexel; K. Nguyen, Ph.D. Colorado;
- C.D. Pionke, Ph.D Georgia Tech, P.E.

**Assistant Professors**
- R.E. Bond, Ph.D. West Virginia; A. English Ph.D. Harvard-MIT

**Emeriti Faculty**
- J.W. Hodgson, Ph.D. Georgia Institute of Technology, RE; W.T. Snyder, Ph.D. Northwestern

**Bachelor of Science Programs**

The department offers a Bachelor of Science in Mechanical Engineering, Aerospace Engineering, and Biomedical Engineering. The mission of the department is to provide a broad base integration of courses and experiences that prepare graduates to practice their profession successfully, to apply their skills to solve current engineering problems collaboratively, and to help advance the knowledge and engineering practice in their fields.

**Progression Toward Graduation**

The freshman year curriculum is common to all engineering majors. The sophomore curriculum is nearly identical for all students in the department. The first two years are considered to be lower-division and the two remaining years upper-division. Upon completion of the lower division courses, the student must apply for progression to the upper-division in order to continue in the department. Students allowed to progress may be awarded Full Status or Provisional Status. Factors considered include overall grade point average, performance in lower division engineering and math courses, and evidence of orderly progression through the lower division curriculum.

**Full Status**

A Lower Division student may apply for progression to Upper Division after completing 47 semester hours of Lower Division engineering curriculum course work with an overall GPA of at least 2.4.

**Provisional Status**

Students who have completed 47 semester hours of Lower Division engineering curriculum course work with an overall GPA between 2.0 and 2.4 may apply for Provisional Status. The granting of Provisional Status is based on the availability of space in departmental programs after Full Status students have been accommodated. Provisional Status students are required to demonstrate their ability to perform satisfactorily in Upper Division by attaining a minimum GPA of 2.0 in the first 12 semester hours of 300 level required engineering courses. Award of Upper Division Full Status is dependent upon this performance.

Students with an overall GPA less than 2.0 in 47 hours of Lower Division engineering curriculum course work will not be admitted to Upper Division. Students who have not progressed to Upper Division will be dropped from departmental class rolls.

**Transfer Students**

Students transferring more than 26 hours from another institution are considered Transfer Students. Students transferring 47 hours or more will be admitted to Upper Division, if eligible, with Provisional Status.

**Loss of Full Status**

Full Status students are expected to maintain a overall GPA of 2.0 and a GPA of 2.0 in departmental courses. Failure to maintain these levels of performance will result in a review of the student’s progress and possible loss of Full Status.

**Graduation Requirements**

A minimum cumulative GPA of 2.0 in all departmental courses taken at The University of Tennessee is required for graduation. This is in addition to the University’s graduation requirements.

**MECHANICAL ENGINEERING MAJOR**

Mechanical Engineering involves the design, analysis, testing, and manufacture of mechanical and thermal systems. Mechanical engineers are employed in nearly every industry, from basic research through mass production of energy systems, computer software/hardware, robotics, and automobiles.

Mechanical Engineering is a versatile and broadly based engineering discipline that also provides pathways into many exciting fields of specialization. Its foundation is in the basic sciences, but mechanical engineers must further understand such subject areas as mechanical design, solid and fluid mechanics,
thermodynamics, heat transfer, vibrations, manufacturing processes, instrumentation and automatic control. Design projects throughout the curriculum develop student skills in handling practical real-world problems. Because of the broad engineering foundation and design training in this program, graduates are found in nearly every industry and at different levels of research, design, and management.

The educational objectives of the Mechanical Engineering program are:

- To educate students thoroughly in methods of analysis, including mathematical and computational skills appropriate for application to engineering problems;
- To develop the skills pertinent to the design process, including skills needed for formulation of problems, analysis, synthesis, and skills pertinent to effective communication and collaborative work;
- To teach students to use modern experimental and data analysis techniques for engineering application; and
- To prepare students for lifelong learning, nourish creative talents, and provide understanding of professional and ethical responsibilities.

Requirements for the Bachelor of Science in Mechanical Engineering

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
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<tr>
<td>Engineering 101, 102</td>
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<tr>
<td>Chemistry 120, 130</td>
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<tr>
<td>Mathematics 141, 142</td>
<td>8</td>
</tr>
<tr>
<td>Engineering Fundamentals 101, 102</td>
<td>12</td>
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<tr>
<td><strong>Sophomore</strong></td>
<td></td>
</tr>
<tr>
<td>Mathematics 200, 231, 241</td>
<td>8</td>
</tr>
<tr>
<td>Physics 231, 232</td>
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<tr>
<td>Mechanical Engineering 231, 321</td>
<td>6</td>
</tr>
<tr>
<td>Materials Science and Engineering 201</td>
<td>3</td>
</tr>
<tr>
<td>Mechanical Engineering 331</td>
<td>3</td>
</tr>
<tr>
<td>Economics 201</td>
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</tr>
<tr>
<td>1 General Education Electives</td>
<td></td>
</tr>
<tr>
<td><strong>Junior</strong></td>
<td></td>
</tr>
<tr>
<td>Mechanical Engineering 332, 344, 345, 363, 365, 366, 391</td>
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</tr>
<tr>
<td>Electrical and Computer Engineering 301, 302</td>
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<tr>
<td>Aerospace Engineering 341</td>
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</tr>
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<tr>
<td><strong>Senior</strong></td>
<td></td>
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<td>Mechanical Engineering 402, 451, 466, 475,449, 431</td>
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<td>Mechanical Engineering 455 and 469 or 456 and 479</td>
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<td>Technical Elective</td>
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</tr>
<tr>
<td>Technical Elective (to be selected from Mechanical Engineering 452, Aerospace Engineering 351, Industrial Engineering 300)</td>
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</tr>
<tr>
<td>1 General Education Electives</td>
<td></td>
</tr>
<tr>
<td>Total</td>
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</table>

1 General Education Electives: See College of Engineering General Requirements.

AEROSPACE ENGINEERING MAJOR

Aerospace Engineering uses the basic sciences and mathematics to develop the foundation for the design, development, production, testing, and applied research associated with aerospace vehicles. These vehicles include aircraft, spacecraft, and missiles. Auxiliary and propulsion systems are also an integral part of this education. These include guidance, control, environmental, ramjet, rocket, turbo-jet, and piston engine systems. Emphasis in the senior year is directed toward these topics, and the program culminates in a major aerospace design project.

The educational objectives of the Aerospace Engineering program are:

- To provide students with a comprehensive education that includes in-depth instruction in aerodynamics, structures, flight mechanics, orbital mechanics, flight propulsion, and the design of aerospace systems;
- To prepare students for professional careers in Aerospace Engineering by developing the skills pertinent to problem solving, analysis, design, and those personal skills required for teamwork and effective communication;
- To provide adequate opportunities to develop and cultivate lifelong learning skills, individual professionalism and ethics, and to nourish creative talents.

Requirements for the Bachelor of Science in Aerospace Engineering

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Freshman</strong></td>
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</tr>
<tr>
<td>Engineering 101, 102</td>
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<td>Chemistry 120, 130</td>
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<td>Mathematics 141, 142</td>
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<tr>
<td>Engineering Fundamentals 101, 102</td>
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<tr>
<td><strong>Sophomore</strong></td>
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<tr>
<td>Aerospace Engineering 201</td>
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<td>Mathematics 231; 241</td>
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<td>Economics 201</td>
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<tr>
<td>1 General Education Elective</td>
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<tr>
<td><strong>Junior</strong></td>
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<tr>
<td>Mechanical Engineering 332, 363, 391</td>
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<tr>
<td>Aerospace Engineering 341, 345, 351, 363, 370</td>
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</tr>
<tr>
<td>Electrical and Computer Engineering 301, 302</td>
<td>6</td>
</tr>
<tr>
<td>1 General Education Electives</td>
<td></td>
</tr>
<tr>
<td><strong>Senior</strong></td>
<td></td>
</tr>
<tr>
<td>Mechanical Engineering 344, 451, 402</td>
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</tr>
<tr>
<td>Aerospace Engineering 426, 429</td>
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<td>Aerospace Engineering 422, 424, 425</td>
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<td>Aerospace Engineering 431, 449</td>
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<tr>
<td>1 General Education Electives</td>
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</tr>
<tr>
<td>Total</td>
<td>136</td>
</tr>
</tbody>
</table>

1 General Education Electives: See College of Engineering Genera

Minor in Aerospace Engineering

A coursework program leading to a minor in Aerospace Engineering for students in other engineering degree programs is also offered.

Aerospace Engineering 341, Mechanical Engineering 231, 321, and 332 or equivalent background are prerequisites to a minor in aerospace engineering. The minor consists of five of the following six aerospace engineering courses: 351 (3), 363 (3), 370 (3), 422 (3), 424 (3), and 425 (3). The grade in each of the Aerospace Engineering courses must be at least C. Prerequisites will be checked the first day of class every term for each of the Aerospace Engineering courses.
**BIO MEDICAL ENGINEERING MAJOR**

The Biomedical Engineering degree curriculum integrates selected engineering sciences and design methods with life science course work. The program prepares students for careers in a variety of health care related professions including work for medical device manufacturers and regulatory governmental agencies. The course content of the biomedical engineering curriculum complements the departmental strengths in mechanical engineering and includes a comprehensive coverage of engineering materials and biomechanics applications. Elective courses are available to allow students to specialize their curriculum to areas of particular current interest in the marketplace such as cellular and tissue engineering applications. The biomedical engineering program also allows students to meet medical school admission requirements with an appropriate selection of technical electives.

The educational objectives of the biomedical engineering program are:

- To provide students with a solid foundation in mathematics, the basic and engineering sciences and engineering design methods;
- To provide students with a comprehensive integration of engineering methods of problem-solving and design with the biological sciences;
- To develop the skills needed for work in the medical device industry including a thorough coverage of engineering materials, biomaterials, biomechanics, medical device design, and work in interdisciplinary teams;
- To provide essential laboratory experience with commonly used biomedical devices and systems and to provide coverage of methods for the design of experiments in medical and life science applications;
- To provide a biomedical technology-based engineering background for students desiring admission to medical school with admission requirements being met through the appropriate selection of elective course work.

### Requirements for the Bachelor of Science in Biomedical Engineering

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Freshman</strong></td>
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<tr>
<td>English 101,102</td>
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<tr>
<td>Chemistry 120,130</td>
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<tr>
<td>Mathematics 141,142</td>
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<tr>
<td>Engineering Fundamentals 101,102</td>
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<tr>
<td><strong>Sophomore</strong></td>
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<tr>
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<tr>
<td>Technical Electives</td>
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<td>Electrical and Computer Engineering 301</td>
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<td>Aerospace Engineering 341</td>
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<td>Biomedical Engineering 300</td>
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<td>Materials Science and Engineering 474</td>
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<td>Economics 201</td>
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<td>Mechanical Engineering 331</td>
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<tr>
<td>Philosophy 345</td>
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<tr>
<td><strong>Total</strong></td>
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<td>135</td>
</tr>
</tbody>
</table>

*General Education Electives: See College of Engineering General*

---

**Department of NUCLEAR ENGINEERING**

www.engr.utk.edu/nuclear

**Professors**

H.L. Dodds (Head), Ph.D. Tennessee, P.E.; P.G. Groer, Ph.D. Vienna; L.F. Miller, Ph.D. Texas A&M, P.E.; A.E. Ruggles, Ph.D. Rensselaer; L.W. Townsend, Ph.D. Idaho; P.E.; B.R. Upadhyaya, Ph.D. California, P.E.

**Research Professors**

M.H. Fontana, Ph.D. Purdue, P.E.; M.L. Grossbeck, Ph.D. Illinois; J.T. Mihalczo, Ph.D. Tennessee; F.R. Mynatt, Ph.D. Tennessee

**Associate Professors**


**Research Assistant Professors**

A.V. Gribok, Ph.D. Russia (IPPE); H.M. Moussa, Ph.D. Tennessee

**Emeriti Faculty**

R.E. Uhrig, Ph.D. Iowa State

**General**

Nuclear engineering is the engineering discipline that focuses on the application of nuclear and atomic processes for the benefit of mankind and the environment. Radiological engineering is a specialty of nuclear engineering that addresses biological applications such as radiation safety (health physics). Some examples of nuclear and radiological engineering are production of electric power with essentially no air pollution, production of radioisotopes for medical and industrial uses, and development of radiation based methods for the diagnosis and treatment of cancer.

The mission of the Nuclear Engineering Department is to:

- Produce high quality nuclear and radiological engineering graduates from undergraduate through the doctoral level in order to help meet the manpower needs of our state, region, nation, and the international community.
- Conduct nuclear and radiological engineering related research to help meet the needs of society.
- Perform service for industry, government, professional organizations, and the public in areas related to nuclear and radiological engineering.
Bachelor of Science Program

The program for the Bachelor of Science degree in Nuclear Engineering is nationally accredited by the Accreditation Board for Engineering and Technology (ABET) which is described earlier in this catalog. The educational objectives of the Bachelor of Science program are to:

- Provide students with fundamental knowledge in mathematics, computer science, the basic sciences, and the engineering sciences that is necessary to solve state-of-the-art problems in nuclear and radiological engineering.
- Provide students with a real-world design and analysis experience in nuclear and radiological engineering that shall include environmental, societal, safety, and economic considerations.
- Provide students with appropriate skills in oral and written communication, teamwork, laboratory work, problem solving and the use of modern engineering tools that will prepare them to work productively in a contemporary and global environment.
- Provide students with a diverse general education in the humanities, ethics, and social sciences to compliment their technological education in order to understand and appreciate the importance of each in society and in personal development.
- Foster a genuine desire for life-long learning in students.

Students majoring in nuclear engineering take courses in the basic sciences, engineering fundamentals, mathematics, computer science, humanities, and special areas of nuclear engineering including nuclear system design and safety; radiation transport and shielding; heat transfer and fluid flow; instrumentation and controls; fuel cycle and waste management; and health physics. Nuclear engineering students may concentrate in radiological engineering by substitution of three courses. The radiological engineering concentration also satisfies most of the requirements of pre-med, pre-vet, and pre-dentistry programs.

NUCLEAR ENGINEERING MAJOR

Requirements for the Bachelor of Science in Nuclear Engineering

<table>
<thead>
<tr>
<th>Year</th>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freshman</td>
<td>English 101,102</td>
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<td>Chemistry 120,130</td>
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<td>Engineering Fundamentals 101,102</td>
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<tr>
<td>Sophomore</td>
<td>Mathematics 231, 241</td>
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</tr>
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<td></td>
<td>Physics 231, 232</td>
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<td>Nuclear Engineering 200, 203</td>
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<td>Electrical Engineering 301</td>
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<td>Computer Science 102</td>
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<td>Junior</td>
<td>Mathematics 403</td>
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<td>Physics 341</td>
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Total 134

Radiological Engineering Concentration

Requirements for the Bachelor of Science in Nuclear Engineering—Radiological Engineering Concentration

<table>
<thead>
<tr>
<th>Year</th>
<th>Course</th>
<th>Hours Credit</th>
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<tr>
<td>Freshman</td>
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<td>Chemistry 120,130</td>
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<td>Engineering Fundamentals 101,102</td>
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<td>Mathematics 231, 241</td>
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<td>Nuclear Engineering 200, 203</td>
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<td>Electrical Engineering 301</td>
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<td></td>
<td>Computer Science 102</td>
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<td></td>
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<tr>
<td>Junior</td>
<td>Mathematics 403</td>
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<td>Physics 341</td>
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<tr>
<td>Senior</td>
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<td>Mechanical Engineering 402</td>
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<td>Biochemistry and Cellular and Molecular Biology 230</td>
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<td>Statistics 251, Biochemistry and Cellular and Molecular</td>
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<td>Biology 310, or Chemistry 350</td>
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Total 131

1 General Education Electives must include one course from the Communications Cluster and one course from the Professional and Ethical Responsibility Cluster.
2 Technical Electives are selected from upper division mathematics and engineering courses and must be pre-approved by the department.
3 Pre-med, pre-vet, and pre-dentistry students must take Chemistry 360 and also Chemistry 369.
The College of Nursing at The University of Tennessee was established in July 1971 in response to a long-recognized and well-established need for nurses prepared at the collegiate level. The undergraduate program combines the unique resources of the UT campus with those of the University’s comprehensive teaching hospital and other health care agencies in a manner that enables both faculty and students to participate fully in all facets of the health care delivery system. The program is accredited by the National League for Nursing Accrediting Commission that may be contacted for information about tuition, fees, and length of program at 61 Broadway, New York, New York 10006, phone 1-800-669-9656. The program is also unconditionally approved by the Tennessee Board of Nursing.

The baccalaureate nursing program has as its central foci the person, health, environment, and nursing. General education courses, nursing courses, and electives are organized in a manner designed to promote and develop creative thinking and other cognitive, affective, and psychomotor processes that are essential for effective nursing practice and for full and meaningful involvement as a contributing member of society. A broad base of general education, a thorough study of human behavior, an emphasis on health maintenance, health promotion, and health restoration, and a strong family and community orientation are essential components of baccalaureate education in nursing. By maintaining a high quality relevant program that is responsive to the increasing complexity of health care delivery, the ever changing health needs of society, and the changing and expanding role of the nurse, graduates of the program are able to: (1) assume beginning leadership positions in nursing in a variety of settings; (2) work collaboratively with other health professionals; (3) function as socially conscious and contributing citizens; and (4) pursue advanced education on either a formal or an informal basis.

General Requirements
In order to obtain a Bachelor of Science in Nursing degree students are required to successfully complete eight semesters of full-time study or the equivalent in part-time study, for a total of 123-124 semester hours. One-hundred twenty-three semester hours are required for graduation. The program also accommodates registered nurses who hold associate degrees in nursing or who are graduates of diploma nursing programs. All upper-division courses, with the exception of 314, 351, 400, 402, 406, and 480, are restricted to students who have been approved for progression. (See Progression Policies and Procedures.)
Nursing Substitutions

Mathematics 115 or any statistics course; Mathematics 119 or any higher level college math course; any two semesters of History; Child and Family Studies 210 or Psychology 300; Chemistry 100-110 or 120-130; Microbiology 210 or 310 with 319 lab.

Progression Policies and Procedures

Current standards are available from the Director of Student Services, College of Nursing, Room 203. Students, including registered nurses, who are admitted as nursing students in their freshman or sophomore years must apply for progression to the upper division prior to their junior year.

1. During the spring semester of the year the student expects to meet all lower division course requirements, she/he must complete a Petition for Progression form and submit it to the college’s Student Services Office. Applicants for upper division nursing should submit their Petition for Progression with transcripts for all colleges attended no later than January 20. Students will be selected on the basis of: (a) cumulative GPA for courses completed; (b) cumulative GPA for required science, social science, math, and English courses; (c) number of course withdrawals and repetitions; (d) grade improvement over time; (e) probability of completing all lower division requirements prior to the following fall; and (f) the availability of space.

2. If a student is selected for progression but then fails to successfully complete all lower division requirements (except for humanities, history, and multicultural/integrative studies electives) prior to the fall semester, the student will not progress and must submit another petition for progression the following year.

3. Registered Nurses must be licensed to practice in the state of Tennessee.

Grading and Continuation Policies

1. The minimum acceptable grade for all courses in the curriculum is a C.

2. Satisfactory/No Credit grading option is not permitted to meet degree requirements in Nursing unless that is the only way the course is offered.

3. No nursing course may be repeated more than once. If a D, F, or NC grade is earned on the second attempt the student will be required to withdraw from the program.

4. Any student who receives a grade of D, F, or NC for more than one nursing course will be required to withdraw from the program even if the previous course for which D or F was awarded has been repeated with a grade of C or higher.

5. If a student receives an Incomplete (I) in a nursing course, the I must be removed prior to enrolling in any course for which the uncompleted course is a prerequisite.

6. If a student’s clinical performance for any nursing course is found to be unsatisfactory, the grade for that course will be an F regardless of any other grades earned in other components of the course. If the unsatisfactory clinical performance is characterized by unethical, unprofessional, or unsafe behavior, behavior that actually or potentially places the client in jeopardy, the student will be required to withdraw from the program.

7. Requirements for competence in cardio-pulmonary resuscitation are included in the Undergraduate Student Handbook.

Approved Electives

The Bachelor of Science in Nursing program includes 6 hours in humanities (Philosophy 345 and elective) and 6 hours in multicultural or integrative studies. Courses in the following areas are accepted to satisfy elective requirements.

HUMANITIES


MULTICULTURAL OR INTEGRATIVE STUDIES

Anthropology 100-499; Architecture 406; Child and Family Studies 220, 240; Comparative Literature 100-499; Economics 100-499; Educational Psychology 460; Geography 100-499; Health 100-499 (excluding 230, 310, 325); Human Services 100-499; Military Science and Leadership (any number), Nursing 202, 314, 493, 470, 480; Political Science 100-499; Psychology 330; Recreation and Leisure Studies 425; University Studies 100-499; Sociology 415; Foreign Language (intermediate level or higher): Chinese 231, 232; Classics 264 (Greek), 251, 252 (Latin); Japanese 251, 252; Arabic 221, 222; Hebrew 241, 242; Persian 261, 262; French 211, 212, 217, 218; German 201, 202; Italian 211, 212; Portuguese 211, 212; Russian 201, 202; Spanish 211, 212, 217, 218.

HISTORY REQUIREMENTS


Gerontology Minor

An interdisciplinary undergraduate Gerontology minor is available and consists of 12 hours of coursework. The minor requires 9 hours from the following: Child and Family Studies 312: Families in Middle and Late Adulthood (3); Health 406: Death, Dying, and Bereavement (3); Health 465: Aging and Health (3); Sociology 415: Sociology of Aging, and (3); Nursing 400: Aging and Society (3). The minor requires a 3 hour practicum experience which is taken by registering for Nursing 402: Gerontology Practicum (3).

Health and Insurance Requirements

Students must meet specific physical examination and immunization requirements as specified by state law and by the rules and regulations set forth by the various clinical agencies. All non-nurse students must participate in the college’s group professional liability insurance program. All registered nurses must provide proof that they have appropriate professional liability insurance coverage. Specific information concerning these requirements will be provided to the students at appropriate times by the nursing faculty and/or the Director of Student Services.

Course Load

The maximum credit hours per semester for which a nursing student may register without special permission is 19.

Requirements for the Bachelor of Science in Nursing

<table>
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<th>Freshman Hours</th>
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<td>Chemistry 100-110 or 120-130</td>
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<td>Humanities</td>
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<td>Sociology or Anthropology</td>
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<td>Biology 101</td>
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</tbody>
</table>
**Sophomore**

*Ecology and Evolutionary Biology 240 (Anatomy) .............................................. 4
*Biochemistry and Cellular and Molecular Biology 230 (Physiology) ............ 5
Microbiology 210 ........................................................................................................ 3
Nutrition 300 .............................................................................................................. 3
Child and Family Studies 210 ............................................................................... 3
Multicultural or Integrative Studies ................................................................. 3
Nursing 201 (Introduction to Nursing) ............................................................. 2
History ....................................................................................................................... 6
Philosophy 345 ........................................................................................................ 3

**Junior**

Nursing 311, 319, 333, 341, 351, 361, 381, 382 ................................................... 28

**Senior**

Nursing 403, 406, 421, 451, 452, 461, 471, 482, 490 ........................................... 31

Total 124

*Transfer students need a total of at least 8 credit hours in Anatomy and Physiology and may graduate with 123 credit hours.

The following courses are open to all university students: 202, 314, 351, 400, 402, 406, and 480.

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**RN Track Courses for Bachelor of Science in Nursing**

1. RNs must complete the same non-nursing requirements as other students. They are exempt from the sophomore level 201 Introduction to Nursing course and will be given proficiency credit based on RN status. (Satisfactory/No Credit).

2. Students will take the NLN ACE examinations prior to starting upper division coursework. If a decision score of 100 is achieved (per section) the student will receive proficiency credit for four of the major clinical nursing courses exclusive of Community Health. Courses for which credit can be obtained in this manner include 361, 403, 461, and 421, and are indicated with a double asterisk. (Satisfactory/No Credit).

3. All students take the Community sequence 382 and 482.

4. RN-BSN students can elect to challenge 333 Health Assessment by taking the NLN Physical Assessment Examination and passing a “hands on” lab demonstration of assessment skills. Indicated with an asterisk. (Satisfactory/No Credit).

5. Proficiency credit can be obtained in several other courses by passing instructor-made exams or preparing a portfolio as specified by the faculty. These courses include 319 Pathophysiology of Health Deviations, 351 Pharmacology I, 406 Pharmacology II, and 451 Professional Leadership Issues II (indicated by an asterisk). RN-BSN students also have the option to demonstrate proficiency in 490 Specialty Perceptorship via portfolio or through individual learning experiences developed in collaboration with their advisor. Eligibility for challenge of 451 Professional Leadership Issues II is based on documented employment in a nursing leadership position for at least one-year within the last five years. Challenge of 451 carries a Satisfactory/No Credit grade. All proficiency credit not designated as Satisfactory/No Credit carries a letter grade.

6. The entire upper-division nursing curriculum can be completed in one calendar year. Students not enrolled in nursing courses for two consecutive semesters, excluding summer, will be administratively withdrawn from the program. Those seeking re-entry must reapply to the College of Nursing. Students already accepted into the Masters’ Program may be exempted from Multicultural/Integrative Studies (3 hours) and Nursing Electives/Independent Study (5 hours) if they have 123 undergraduate hours. Students accepted for the Masters’ Program can begin part time graduate level study while in the final semester of the undergraduate program.

**Total Upper Division**

5. Proficiency credit can be obtained in several other courses as other students. They are exempt from the sophomore level 201 Introduction to Nursing course and will be given proficiency credit based on RN status. (Satisfactory/No Credit).

More information about the RN-BSN track can be obtained from the College of Nursing Student Services Office or from the faculty advisors for registered nurses.
Professors
M. Cetingok, Ph.D. Washington University; C. Faver, Ph.D. University of Michigan; C.A. Glisson, Ph.D. Washington University; R.M. Nooe, DSW Tulane University; W. Nugent, Ph.D. Florida State University; J. Orme, Ph.D. Washington University; K.M. Sowers, Ph.D. Florida State University; J. Wodarski, Washington University

Associate Professors
P.M. Campbell, DSW University of Alabama; T. Combs-Orme, Ph.D. Washington University; D. Dupper, Ph.D. Florida State University; M. Egan, Ph.D. University of Maryland; T. Evans, Ph.D. University of Minnesota; C. Galambos, Ph.D. Catholic University; D.A. Patterson, Ph.D. University of Utah; C. Rocha, Ph.D. Washington University; M. Rogge, Ph.D. Washington University; J. Spicuzza, MSSW University of Tennessee; H. Vaughn, Ed.D. Memphis State University

Assistant Professors
B. Bride, Ph.D. University of Georgia; S. Bowie, Ph.D. Barry University; S. Cummings, Ph.D. University of Georgia; C. Davis, University of California (Los Angeles); V. DeCoster, Ph.D. Louisiana State University; C. Dulmus, Ph.D. SUNY Buffalo; R. Ellis, Ph.D. Florida International University; T. Johnson, MSSW University of Texas (Austin); J. Jones, Ph.D. Clark-Atlanta University; S. MacMaster, Ph.D. Case Western Reserve University; M. Sullivan, Ph.D. University of Georgia; M. Staudt, Ph.D. Washington University; M. Theriot, MSSW University of Texas (Austin); G. Washington, MSSW Clark-Atlanta University

Field Coordinators
P. Betz, MSSW University of Tennessee; D. Bowers-Mitchell, MSSW University of Tennessee; P. Enochs, Ed.D. Tennessee State University; B. Thompson, MSWW University of Tennessee

Social Work Major
Social work is a helping profession which focuses on providing skilled intervention in the prevention and amelioration of individual and societal problems. It is a challenging and rewarding career involving the application of knowledge, skills, and professional values to assist individuals, families, groups, and communities in reaching their potential. The primary mission of the undergraduate social work program is to develop generalist social workers who are strategic thinkers, life-long learners, and opinion shapers. It is the purpose of the College to provide an education which enhances individual and career development and fosters involvement on behalf of social and economic justice.

The program prepares students for social work careers in such diverse areas as schools, youth programs, family service agencies, nursing homes, courts, mental health, and welfare agencies. The degree provides graduates a competitive advantage in many jobs, the possibility of up to one year’s standing in some master’s degree programs in social work, and the potential to be licensed in a number of states throughout the nation.

The social work curriculum builds on a strong liberal arts base. The humanities and the social and behavioral sciences are emphasized to help students understand human diversity and the transactions between people and their environment. The curriculum combines classroom experience and agency-based field placements. Courses provide a knowledge base in social work practice theory, human behavior, social welfare policy, and research. Educationally directed field placements, which consist of over 600 clock hours of supervised field instruction in agency settings throughout greater Knoxville, provide extensive and challenging opportunities for students to apply the lessons of the classroom to the needs of society. The program is accredited by the Council on Social Work Education.
The undergraduate social work program (BSSW) started in 1982 in the College of Liberal Arts. It was granted initial accreditation by the Council on Social Work Education in January 1983, and reaffirmation was given in 1992 and 2001. The program was transferred to the College of Social Work in September 1985. The three programs, BSSW, MSSW and Ph.D., in the College represent the full continuum of social work education.

**Facilities**

The College of Social Work is housed in Henson Hall, located on the corner of Cumberland Avenue and Volunteer Boulevard on the UT campus. This building houses the administrative and faculty offices, along with classrooms for the BSSW, MSSW and Ph.D. programs. Video and computer resources are available to facilitate instruction.

**Graduate Program**

The College of Social Work offers a fully accredited two year graduate professional degree at the master’s level (MSSW). The College also offers a graduate program leading to a Doctor of Philosophy in Social Work (Ph.D.). Information concerning graduate programs is given in the College of Social Work Bulletin and also in the Graduate Catalog. Masters Degree Programs are offered on the campus in Knoxville and in Nashville and Memphis. The Ph.D. Program is offered in Knoxville.

**Grading Policy**

The satisfactory/no credit option is not permitted in the major. The minimum acceptable grade for all social work courses is a C. Courses, other than field, in which a D or F is achieved may be repeated once. Field courses must be completed with a C or better, and may not be repeated.

A student receiving an incomplete (I) in any social work course must remove the incomplete before enrollment in subsequent field practice.

**Course Load**

The maximum credit hours per semester allowed for any student is 19. Special permission is needed for any over load.

**Progression Requirements**

Students admitted to the University may request a faculty advisor from the College of Social Work. Students in the College must move through Initial and Full Progression. The following factors identify progression criteria for all social work students:

**Initial Progression**

1. Successful completion of Social Work 200 and 250 with a grade of C or better.
2. Cumulative grade point average of 2.0 or above.
3. Successful completion of a minimum of 60 semester hours.
4. Initial progression must be completed prior to enrollment in any 300-level social work courses.
5. Favorable review of the student’s application for entry into the junior level social work courses by the faculty admissions committee. The application requires an essay discussing the student’s interest in and preliminary understanding of the profession.
6. Completion of fifty (50) clock hours in community service at one public/private social service agency. The community service is to take place after enrollment in a higher education institution and in the twenty-four month period prior to application for initial progression.

**Full Progression**

1. Successful completion of junior level social work courses with a grade of C or better.
2. Cumulative grade point average of 2.0 or above.
3. Successful completion of a minimum of 90 semester hours.
4. Full progression must be completed prior to enrollment in 400-level social work courses.
5. Favorable approval by the BSW faculty prior to entry into senior level classes. This process will include a review of the student’s performance in junior field practice.

Full progression is based on the requirement that social work has an intensive field component in which students demonstrate aptitude and ability to work with other people. While review is ongoing, full progression provides an additional opportunity to review the students’ potential for entry-level practice.

**Requirements for the Bachelor of Science in Social Work**

<table>
<thead>
<tr>
<th>Course Load</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
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<td>Freshman</td>
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<tr>
<td>English 101, 102</td>
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<tr>
<td>Mathematics 110 or Math 119</td>
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<tr>
<td>Biology 101-102</td>
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<tr>
<td>Anthropology 130</td>
<td>.................. 3</td>
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<tr>
<td>Political Science 101</td>
<td>.................. 3</td>
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<tr>
<td>Women’s Studies 220, 453, 375, or 382</td>
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<tr>
<td>Sophomore</td>
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<tr>
<td>Information Sciences 310</td>
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<tr>
<td>Humanities (Literature Package)</td>
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<td>Humanities (Philosophy)</td>
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<td>History 241-242 or 261-262</td>
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<td>Psychology 220</td>
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<tr>
<td>Economics 201</td>
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<tr>
<td>Social Work 312, 313, 314, 316</td>
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<tr>
<td>Foreign Studies</td>
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<td>Math 115 or Psychology 385</td>
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<td>Child and Family Studies 220</td>
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<tr>
<td>Social Work 480, 481</td>
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<td>Regional Studies</td>
<td>.................. 3</td>
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<tr>
<td>Electives</td>
<td>.................. 11</td>
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</tbody>
</table>

Total 124

1Educational Interpreting 223 - American Sign Language I (3), and 226 - American Sign Language II (3) will fulfill the foreign language requirement.
2The following literature packages may be selected: Classics 253-254; English 201-202; English 221-222; two courses from English 231, 232, 233; Russian 221-222; Religious Studies 312-313.
3One course selected from: Anthropology 313; Classics 381; Classics 382; English 302; Geography 372; Geography 373; Geography 375; Geography 379; German 363; History 320; History 360; History 361; History 374; Philosophy 326; Political Science 350; Political Science 361; Religious Studies 332; Religious Studies 386; French 432; Sociology 446; Women’s Studies 380.
4Asian Studies 101-102 or History 255-256 or Medieval Studies 201-202.
5Anthropology 312; Geography 363; History 444; History 449; Political Science 315; Religious Studies 351.

*Initial progression is also determined by the number of available field practice slots in social service agencies and classroom space. If the number of students who fulfill the above criteria exceeds the number of students that can be accommodated, students will be selected on the basis of cumulative GPA for courses completed, the grades received in SW 200, 250, evaluation of community service, and writing skills demonstrated in the application essay.
The University Honors Program is carefully designed to give academically outstanding students a special undergraduate honors experience comprising special courses, seminars, mentoring programs, senior research projects and other features. Students typically are invited to become University Honors scholars prior to enrolling at the University. Students not initially admitted should complete at least one formal honors course during the first year and contact the program office to discuss and obtain application materials. Prospective University Honors students are selected on the bases of previous academic performance, demonstration of an eagerness to be active learners and leaders, and extracurricular activities. The University Honors Program is administered by the Director, Associate Director, and Assistant Director with consultation by the University Honors Council which includes faculty and representatives of the University administration.

University Honors Scholars are expected to pursue the highest levels of intellectual and personal achievement as members of the campus community. In addition to required work in their respective colleges, they are required to complete a minimum of four honors courses by the end of the sophomore year and a Honors by Contract course in the student’s major during the junior year; successfully complete a one credit hour honors seminar each term in residence (summer not included); develop a positive relationship with a faculty mentor; have an extensive conference with a member of the University Honors staff each year; and complete the Senior Honors Seminar and a senior Honors project of merit and originality. Additional requirements include participation in Honors dinners each year and the resume and library resource workshops for new students. Failure to meet the above requirements can result in removal from the program and loss of scholarship assistance.

The University Honors Program offices are located at F101 Melrose Hall. Phone: (865) 974-7875; fax: (865) 974-4784; e-mail: honors@utk.edu.

Eligibility

Students who are the recipients of designated merit scholarships, have superior academic credentials, or who are transferring from other honors programs affiliated with the National Collegiate Honors Council are eligible to participate in the University Honors Program. Additionally, students with a superior academic record, including completion of at least one Honors course by the end of the freshman year, are encouraged to contact the program office for information concerning admission at the beginning of the sophomore year. Honors Scholars may pursue any academic major.

Scholarship awards are typically made to entering freshmen or transfer students and include competitive and guaranteed scholarships. Criteria for selection of competitive awards include academic performance, academic and professional promise, involvement in school and community activities, and originality and creativity in the application essays. For all of these awards, Undergraduate Admission and Entering Freshmen Academic Scholarship applications must be submitted prior to November 1 of a student’s senior year in high school (for entering freshmen) or by February 1 of a transfer student’s final year prior to attending The University of Tennessee.

1Honors by Contract—Customized approach in an upper division course in the honors student’s academic major through completion of a written contract indicating additional effort. Contract must be developed within three weeks of the beginnings of the semester, and provision must be completed by the conclusion of the course. Limited to University Honors Program students and required during their third year.
The University of Tennessee Libraries own approximately 2.2 million volumes and subscribe to more than 14,000 periodicals and serial titles.* A growing collection of electronic resources are available through the Libraries’ web page at www.lib.utk.edu. The Libraries’ membership in the Association of Research Libraries reflects the University’s support of large collections of library materials to meet the needs of a comprehensive university curriculum.

Friendly experts at the reference desk in each library offer help and assistance in using the library. AskUs.Now (www.lib.utk.edu/refs/askusnow/) provides chat, e-mail, and telephone connections to librarians. Students will find a wide variety of materials and services in the main library (John C. Hodges Library), four branches on the Knoxville campus (Agriculture and Veterinary Medicine Library, Map Library, Music Library, and Special Collections), and the Social Work Library in Nashville.

Students can search the library catalog and hundreds of databases at any library location — and through the UT Libraries’ web site. Interlibrary Services is available to help students find and retrieve materials that are not available in the UT Libraries. The services and facilities of the University Libraries are accessible to persons with disabilities.

The John C. Hodges Main Library (1015 Volunteer Boulevard) is a 350,000 square-foot building housing collections in all subject areas. The Hodges Library can accommodate more than 3,500 people, with space for group and individual study. The second floor CyberCafe is open for late night study, with

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*Data describe the Knoxville campus, excluding the Law Library.
networked computers, reading tables, and a coffee shop. Students may check out laptop computers equipped for connection to the Library’s wireless network. The Studio (located in the second floor Media Center) offers students a hands-on lab for creating and manipulating digital media. Workshops and classes are offered throughout the semester to help students learn how to get the most out of the Libraries’ services.

The Agriculture and Veterinary Medicine Library (Room A-113, Veterinary Teaching Hospital) has a strong collection in agriculture; veterinary, comparative and human medicine; environmental studies and biodiversity; and related biological sciences.

The Map Library (Room 15, basement of the Hoskins Library, Cumberland Avenue and 15th Street) houses a large collection of sheet maps, atlases, journals, and books related to cartography. Materials in print, film, and digital formats are gathered from commercial sources as well as the Government Depository program.

The Music Library (301 Music Building) has a comprehensive collection of music and music literature, including books, scores, audio and video recordings, current periodicals, and microfilm. Most materials in the Library of Congress “M” classification are located here.

Special Collections (2nd floor, west wing, of the Hoskins Library) is a repository of rare books, manuscripts, and historical ephemera. Students are welcome to use Special Collections. Materials from Special Collections cannot be checked out, but they can be used in the Special Collections Reading Room. The University Archives are also housed in the Hoskins Library. The Archives contain official records of the University; items published by its units, departments, and agencies; and materials that document University of Tennessee life.

The Social Work Library (Suite 292, 193-E Polk Avenue, Nashville) serves College of Social Work students in field practice across the state. The library has a working collection of materials in social work and related disciplines.

The Law Library on the Knoxville campus and the libraries located on the campuses in Chattanooga, Martin, Memphis, and Tullahoma are separately administered. The students and faculty of the University can use all of the libraries affiliated with The University of Tennessee.
The University Studies Program has three general objectives: to foster interdisciplinary teaching and scholarship, especially across departmental and collegiate boundaries; to promote active and integrative learning; and to nurture the scholarly and creative development of faculty, staff, and students.

In pursuit of these objectives, University Studies sponsors several activities. Faculty colloquies are on-going, structured, interdisciplinary conversations on a topic or nexus of topics. Colloquies explore important contemporary issues which involve faculty and students from several disciplines and colleges. Advanced undergraduate and graduate students may attend by permission of colloquy coordinator.

Current colloquies include: Technology, Society, and the Common Good; Aging and Society; the Interdisciplinary Rhetoric Group; Psychoanalysis and the Humanities; Evolution and Culture; the Creative Group; the Critical Theory Group; Appalachian Forum; Cultural Diversity; Values in Higher Education; The Great Conversation; Spirituality and Health; and Intellectual Property. Colloquies continue as long as they have faculty involvement and new colloquies form each year.

Interdisciplinary undergraduate courses are innovative offerings that are typically collaborative or team-taught. Most courses stem from the interdisciplinary colloquy discussions. There are several honors offerings for undergraduates. In addition, University Honors students are encouraged to take a University Studies (200-level or higher) course during their first two years to help fulfill their four honors course requirement.

Centripetals are monthly faculty and staff luncheons held over the academic year designed to encourage conversation among faculty and staff about their creative and scholarly work. University Studies also works with other units across campus to facilitate visits by distinguished scholars of multidisciplinary interest. Such visiting scholars work with Faculty groups on specific projects, participate in interdisciplinary forums, or present special lectures.

For further information, contact:
Dr. Neil Greenberg, Chair
F239 Walters Life Science Building
Phone: (865) 974-8177
FAX: (865) 974-2665
E-mail: unistudy@utk.edu
RESERVE OFFICERS TRAINING CORPS (ROTC) 199

Reserve Officers Training Corps (ROTC)

Department of MILITARY SCIENCE AND LEADERSHIP

http://web.utk.edu/~utrotc/homepage.html

ARMY ROTC

Professor of Military Science and Leadership
Lieutenant Colonel Robert Walsh, B.A. University of Nevada - Reno; M.S. Troy State University; M.A. Webster University

Assistant Professors
Lieutenant Colonel Ron Borden, B.S. Northern Michigan University; Captain Derek Bean, B.S. Columbus State University; Captain Russell Turner, B.S. University of Maryland; CPT Loretta Hanson, Seattle University

Senior Army Instructors
MSG Gary Boyer; SFC Randolph Graves; SSG Chris Nuehard; SGT Eldridge Cunningham

Department Secretaries
Ms. Vicki Parris; Ms. Mary Floyd

Mission
To commission the future officer leadership of the U.S. Army.

Purpose
Army ROTC is an educational program designed to provide the college student an opportunity to earn an Army commission as a Second Lieutenant while completing the University requirements for a bachelor’s degree. The program provides leadership training that will develop the skills and attitudes vital to the professional Army officer. Upon successful completion of the program and graduation from the University, ROTC cadets are commissioned as Second Lieutenants and enter either the active Army, Army Reserve, or Army National Guard component.

Army ROTC at The University of Tennessee

The military program at The University of Tennessee predates that of any other state university in the country, having been introduced in 1844. In that year, Professor Albert Miller Lea, a U.S. Military Academy graduate, organized an infantry company. With the outbreak of the Mexican War, the entire company, as well as thousands of other Tennesseans, volunteered for service in the war. Thus, Tennessee became known as the “Volunteer State.”

When The University of Tennessee reopened after the War Between the States, a system of military discipline was adapted. A Code of Military Regulations was drawn up and a copy was provided each student when he matriculated. The whole institution was put under regular U.S. military academy discipline. The student body was organized into a battalion of cadets, which consisted of four companies fully officered, armed and equipped under the command of the commandant and his staff of cadet officers. The University of Tennessee remained as a Military Garrison for a period of six years, until 1877. Military Science and Leadership continued to be taught, since the University was a Land Grant Institution and instruction in Military Science and Leadership was required by the 1862 Act of Congress.

The National Defense Act of 1916 changed the old military organization into a ROTC unit. For the first time, the Federal Government began to pay a part of the uniform cost for basic
course students. Uniforms and other equipment were provided by the government for juniors and seniors, and a monthly subsistence allowance was given to advanced course students.

From 1928-1930, Major (later Brigadier General) Robert R. Neyland was the Professor of Military Science and Leadership and football coach at The University of Tennessee.

Objectives of the program are to provide students with an understanding of the fundamental concepts and principles of military art and science; to develop a basic understanding of associated professional knowledge, a strong sense of personal integrity, honor, and individual responsibility, and an appreciation of the requirements for national security; and to establish a sound basis for the students’ future professional development.

ROTC draws young men and women for training from all geographical, economic, and social strata of our society, as well as from the many educational disciplines required for the modern Army. The program ensures that men and women educated in a liberal and broad spectrum of American institutions of higher learning are commissioned annually into the officer corps.

The Program

Basic Course

Students entering the Basic Course register for classes at the same time and in the same manner as they enroll in their other college courses. All four classes (Military Science and Leadership 101, 102, 201, and 202) are available to any UT student as an elective course without any military obligation. Completion of the Basic Course, graduation from Leader’s Training Course (Military Science and Leadership 200), or prior military service qualifies students for entry into the Advanced Course, which is normally taken during the last two years of college.

Advanced Course

The Advanced Course is designed to develop and mentor “leaders of character,” who, upon degree completion, will accept a commission in the U.S. Army. The Advanced Course requirement is that applicants have two academic years remaining at either the undergraduate or graduate levels, or a combination of both. Students normally enter the Advanced Course during the last two years of their degree program (junior year for undergraduates, first year of master’s program for graduate level students). The Advanced Course is made up of five Military Science and Leadership classes (Military Science and Leadership 301, 302, 400, 401, 402) and takes two years to complete. All classes except Military Science and Leadership 400 are offered during spring/fall semesters. Military Science and Leadership 400 is a “paid” five-week summer camp held in Seattle, Washington.

Army ROTC develops students under the “whole person” concept. Cadets must maintain academic standards while taking on the additional responsibilities of ROTC. Army ROTC cadets are required to participate in organized physical fitness training. Students enrolled in the Advanced Course are required to be full-time students, taking at least 12 hours each semester.

Placement Credit and Course Substitution

Placement credit and/or course substitution may be granted by the Professor of Military Science and Leadership on the basis of previous honorable active military service, participation in a Junior ROTC program, completion of Military Science and Leadership 200, or completion of Army Basic Training and advanced individual training. A student may request placement credit for a portion of the entire Basic Course. Military Science and Leadership courses taken at other colleges or universities are transferable as approved by the Professor of Military Science and Leadership.

Military Science and Leadership 200 is a “paid” four-week Summer Leader’s Training Course offered to any University of Tennessee student without any military obligation. Students completing this course receive four academic credits, qualify for the Advanced Course by receiving Basic Course credit, and can compete for two years of academic “tuition” scholarships.

Requirements for Enrollment and Continuance

The general requirements for enrollment and continuance in the Army ROTC program are:

1. Basic Course students
   a. Be a citizen of the United States.
   b. Be physically qualified.
   c. Freshman and Sophomore standing. Student with higher standing requires consent of instructor.

2. Basic Course Cadets applying for enrollment in the Advanced Course who seek a Commission must:
   a. Have successfully completed Military Science and Leadership 101, 102, 201, and 202 or have accomplished one of the following:
      Prior Military Service, ROTC Basic Military Studies—Practicum (Military Science and Leadership 200), 3-Year High School ROTC Basic Course.
   b. Have two years remaining at the University (either undergraduate, graduate or in pursuit of additional course work).
   c. Have completed a minimum of 55 semester hours.
   d. Be under 30 years old at time of graduation and commissioning (waivable).
   e. Be enrolled as a full-time student, either at The University of Tennessee or at a nearby institution in a partnership program.
   f. Meet military screening and physical requirements.
   g. Maintain a 2.0 G.P.A.
   h. Maintain B average in Military Science and Leadership Courses as a scholarship student.

Regularly enrolled students who meet the academic prerequisites may take individual courses as electives with the permission of the department head and academic advisor.

Requirements for All Military Science and Leadership Commissionees

The following Military Science and Leadership Advanced Course Curriculum must be successfully completed:

- 301 Leadership and Problem Solving (4); 302 Leadership and Ethics (4); 400 National Advanced Leadership Camp (4); 401 Leadership and Management (4); 402 Officer’ship (4); 430 U.S. Military History, 1754 to Present or 303 Military History (3).

In addition to a baccalaureate degree, there are required and recommended courses in designated fields of study that students must complete prior to commissioning. Students meet these prerequisites by successful completion of required and elective courses taken from the university curriculum in the required areas of concentration.
Courses in the following designated fields of study are strongly recommended of students seeking a commission in the United States Army: one course in written communications; one course in human behavior; one course in math reasoning; one course in computer literacy.

**Special Programs**

**Pay and Entitlements**

All scholarship cadets and cadets enrolled in the ROTC Advanced Course receive uniforms and equipment plus a monthly allowance during the academic year. While attending the ROTC summer studies each cadet receives approximately $740 for Advanced Summer Studies, $740 for Basic Summer Studies, plus meals and clothing are provided.

**Army ROTC Scholarship Program**

The Army ROTC scholarship program offers financial assistance to outstanding young men and women in Army ROTC who are interested in the Army as a career. Each scholarship provides for free tuition, textbooks subsidy, and laboratory fees in addition to a monthly subsistence allowance for the period that the scholarship is in effect. Scholarships may be awarded for either two, three or four years. High school seniors should contact their guidance counselors early in August or September of their senior year to apply for the four-year scholarship. Two and three-year scholarship applicants should contact the Professor of Military Science and Leadership for further information. Other privately financed scholarships and grants are also available to ROTC cadets.

**Leadership Grant Program**

The University of Tennessee ROTC Leadership Grants are designed to attract and retain high quality/caliber students to the Army ROTC program for future positions of leadership within their service and our country. These grants are intended to complement other ROTC and University scholarships by providing funds to offset costs for such areas as: room and board; out-of-state tuition; and first year expenses for Army ROTC scholarship winners.

Up to ten (10) $1,000 Leadership Grants are available each year and are available to scholarship winners and any full-time student enrolled in the AROTC program. Awarding of these Leadership Grants will be determined by the Professor of Military Science and Leadership who will evaluate each candidate in the following areas: ACT/SAT scores; leadership activities; and recommendations from high school personnel and community leaders.

**Simultaneous Membership Program**

The “SMP” option combines the Army ROTC living allowance with membership in the Army Reserve or Army National Guard and allows the student to receive pay from both programs. ROTC cadets serve as “officer-trainees” in direct leadership/management positions. SMP participation with National Guard or reserve forces is one weekend per month and two weeks each year. Cadets participating in the SMP program are eligible for tuition reimbursement (75%).

**Branch Selection**

The curriculum of the Army ROTC Program is designed to qualify the cadet for appointment as an officer. Selection for assignment to the various branches of the Army is based upon: the personal interests of the cadet; the major course of study; academic accomplishments; leadership potential; and the needs of the Service. Under this system a cadet may be commissioned in any branch for which he or she is qualified and in which a need for officers exists. After graduation and commissioning, the officer will attend a service school for further specialized military training which will qualify him or her for the branch to which he or she is assigned.

**Extra Curricular Activities**

Numerous military related activities are available to cadets throughout the school year. These include the Tennessee Rangers, Scabbard and Blade Honor Society, and UT Color Guard. These organizations provide both student-to-student contact and a valuable opportunity to acquire military skills. Additionally, each semester, a number of field training exercises are conducted to develop such military skills as small unit tactics, land navigation and rifle marksmanship.

**Physical Fitness Training**

The Cadet Battalion conducts physical fitness training Monday-Wednesday-Friday. The exercise program focuses on flexibility, muscular strength, and cardio respiratory endurance. Any University of Tennessee student may take the course by registering for Army Conditioning Program 130.

**Military Science and Leadership Curriculum**

<table>
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<th>Normal Course</th>
<th>Hours Credit</th>
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<tbody>
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<td>Military Science and Leadership 103</td>
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</tr>
<tr>
<td>Military Science and Leadership 301, 302</td>
<td>8</td>
</tr>
<tr>
<td>Military Science and Leadership 103</td>
<td>1</td>
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<tr>
<td>Senior</td>
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<td>Military Science and Leadership 401, 402, 430</td>
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<tr>
<td>Military Science and Leadership 103</td>
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**Basic Military Studies—Practicum**

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<th>Summer</th>
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</thead>
<tbody>
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<tr>
<td>Military Science and Leadership 200</td>
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</tr>
<tr>
<td>Junior</td>
<td></td>
</tr>
<tr>
<td>Military Science and Leadership 400</td>
<td>4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>8</strong></td>
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</tbody>
</table>

Variations to these sequences of study may be approved by the Professor of Military Science and Leadership on a case-by-case basis. Lower division credit hours granted by the University for military service are dependent upon time spent in service and service schools attended.
Progression Requirements

1. Minimum semester hours/GPA for entrance into Basic Military Studies-Practicum (Military Science and Leadership 200): 30 semester hours/2.00 GPA.
2. Minimum overall GPA for entrance into the Advance Course (Military Science and Leadership 301, 302, 400, 401, 402): 2.00
3. Minimum GPA in Military Science and Leadership Courses: 3.00.
4. Minimum overall GPA for commissioning: 2.00.
5. Semester counseling sessions with military advisor required for Advance Course and scholarship students only.

Department of
AIR FORCE

http://web.utk.edu/~rotc800/

AIR FORCE ROTC PROGRAM

Professor of Air Force Aerospace Studies
Colonel Marty Coffman, M.S., University of North Carolina

Assistant Professors
Lieutenant Colonel John Cherry, M.A. Chapman University; Lieutenant Colonel Stan Shrader, M.A.S. Golden Gate University; Major David Wims, M.A. University of Alabama, Captain James Evans, M.S., Troy State University

Purpose

The Air Force Reserve Officers Training Corps (AFROTC) is an educational program designed to provide the college student an opportunity to earn an Air Force commission as a Second Lieutenant while completing the University requirements for a bachelor’s degree. The program provides education that will develop the skills and attitudes vital to the professional Air Force officer. Upon successful completion of the program and graduation from the University, students are commissioned as Second Lieutenants and enter active duty.

The Programs

Four-Year Program

Students entering the Four-Year Program may register for the program at the same time and in the same manner as they enroll in their other college courses and there is no military obligation. During their freshman and sophomore years, students enroll in the General Military Course (GMC). They then may compete for entry into the Professional Officer Course (POC), which is normally taken during the last two years of college. Selection into the POC is highly competitive and is based on being medically qualified; physically fit; term and cumulative grade point averages; scores achieved on the Air Force Officer Qualifying Test (AFOQT); successful completion of a four-week field training course at an Air Force base; and the recommendation of the Professor of Aerospace Studies.

Two-Year Program

The Two-Year Program consists of the Professional Officer Course (POC), the last two years of the Four-Year Program. It is designed to provide greater flexibility to meet the needs of both students and the Air Force. The basic requirement is that applicants have two academic years remaining at either the undergraduate or graduate levels, or a combination of both. After being nominated by the Professor of Aerospace Studies, applicants seeking enrollment in the Two-Year Program are evaluated using the same criteria used for the four-year program except the length of the field training course is six weeks. Additionally, every POC applicant must agree to take and successfully complete a course in mathematical reasoning or its equivalent before graduation and commissioning. Courses previously completed may be used to satisfy this requirement.

Since the processing procedure must be completed several months in advance of intended enrollment, interested students must apply early in the fall semester of the academic year preceding the fall term in which they intend to enter the program. Application should be made in person to the Department of Aerospace Studies.

AFROTC develops students under the “whole person” concept. Cadets must maintain academic standards while taking on the additional responsibilities of AFROTC. These extra responsibilities include being physically fit and demonstrating integrity and good moral character. Cadets normally participate in approximately two hours per week of physical activity outside of class requirements.

Women in AFROTC

AFROTC at The University of Tennessee has been coeducational since 1970. Women complete the same courses as men and have the same opportunities. Upon successful completion of the AFROTC program and degree requirements, women are commissioned in the Air Force as Second Lieutenants. Pay and job opportunities are equal for women and men. Virtually all career fields in the Air Force are open to women, including pilot and navigator positions.

Scholarships

Air Force ROTC Scholarships are available to qualified applicants in both the Four- and Two-Year Programs. Each scholarship provides full tuition, laboratory and incidental fees, and book fee. In addition, scholarship cadets receive a non-taxable stipend ranging from $200 to $400 each month during the school year while on scholarship status.

High School Students

Competitive four-year scholarships are available to high school students who enroll in certain scientific and engineering career fields. Some scholarships are also available to students who enroll in certain non-technical majors. Four-year scholarship application information is available on the AFROTC website at http://www.afrotc.com/.

College Students

Other scholarship opportunities exist for students already in college. Three- and two-year scholarships are available on a competitive basis and the student must have at least four, three, or two undergraduate or graduate years of study remaining in order to compete. Applications for these scholarships should be made directly to the Department of Aerospace Studies.

Leadership Grants

The University of Tennessee AFROTC Leadership Grants are designed to attract and retain high quality students to the Air Force ROTC program for future positions of leadership.
THE COLLEGE OF LAW

Thomas C. Galligan, Jr., Dean
John Sobieski, Jr., Associate Dean
Rachael E. Inman, Assistant Dean

The College of Law has, since 1890, continuously sought to provide high quality legal education in a University community. The college offers a professional curriculum leading to the degree of Doctor of Jurisprudence. Two dual degree programs are available in conjunction with the College of Law: the J.D.-MBA program with the College of Business Administration and J.D.-M.P.A. program with the Department of Political Science.

Information regarding admission, financial aid, academic policies, extracurricular activities, and student services is available from the Admissions Office, The University of Tennessee, College of Law, 1505 W. Cumberland Avenue, Knoxville, Tennessee 37996-1810. The completed application should be received before February 1 of the year of requested admission.

COLLEGE OF VETERINARY MEDICINE

Michael J. Blackwell, Dean
James J. Brace, Associate Dean

The College of Veterinary Medicine, established in 1974, offers a professional curriculum leading to the degree of Doctor of Veterinary Medicine (D.V.M.). The college offers graduate studies leading to the degrees of Master of Science (M.S.) and Doctor of Philosophy (Ph.D.) with a major in Comparative and Experimental Medicine. Residency training programs in the various clinical specialties are also offered.

OFFICE OF GRADUATE STUDIES

Anne Mayhew, Vice Provost and Dean of Graduate Studies
S. Kay Reed, Assistant to the Dean

A wide range of graduate programs leading to master’s and doctoral degrees is available. The University offers master’s programs in 76 fields, the Educational Specialist degree, doctoral work in 44 fields, 2 professional programs, and several graduate certificate programs. More than 6,000 graduate and professional students are enrolled on and off campus under the tutelage of 1,500 faculty members.

Complete information concerning graduate study at The University of Tennessee is available in the Graduate Catalog published annually and on the Graduate Studies web site: http://web.utk.edu/~gsinfo.

The Graduate Catalog contains complete information concerning the programs in the college. Forms and instructions for making application for admission may be obtained beginning June 1 from the Office of the Associate Dean, The University of Tennessee, Knoxville, College of Veterinary Medicine, 2407 River Drive, Room A102, Knoxville, Tennessee 37996-4550. Applications must be received by the Veterinary Medical College Application Service (VMCAS) by November 1 of the year prior to requested admission. All pre-veterinary requirements must be completed by the end of the spring term of the year in which the student plans to enroll in the college.
The University of Tennessee is committed to its land-grant mission of public service. The institution meets that mission by extending its continuing education services and programming resources through outreach initiatives. University Outreach and Continuing Education works with academic departments to offer courses, educational services and programs to students, teachers and faculty. The division offers programs using a variety of modes, helping people of all ages achieve degrees and certificates, accomplish professional development goals, and pursue recreational and intellectual interests.

Programs and courses are based upon student needs and desires, whether for self-motivated learning; for leisure and recreational programs; or for professional promotion, certification, licensure, re-licensure, or mid-career changes. The Division provides these opportunities through program coordination and development of the four departments: Department of Conferences, Department of Distance Education and Independent Study, English Language Institute, and Professional and Personal Development.

For more information, contact:
University Outreach and Continuing Education
1534 White Avenue
Knoxville, Tennessee 37996-1526
Phone: (865) 974-3181, fax: (865) 974-6629
E-mail: outreach@tennessee.edu
Web Site: www.outreach.tennessee.edu

Department of Conferences and University Conference Center
Norvel Burkett, Associate Dean and Director
Robert Gibbs, Assistant Director

The Department of Conferences, housed in the Conference Center Building in downtown Knoxville, provides management services to university departments and faculty or outside groups that desire to hold an educational meeting anywhere in Tennessee or across the United States.

The department assists organizations in designing and managing programs to meet the needs of attendees. The staff provides professional guidance and management for small group meetings as well as for major conventions of several thousand delegates. Consulting and support services can include planning and budgeting, registration, lodging, food services, promotional materials, meeting-site management and all details to ensure a successful event. Some programs qualify for Continuing Education Units (CEUs), which become a permanent record maintained by the University Outreach and Continuing Education.

Additional information may be obtained from:
University of Tennessee Conferences
P.O. Box 2648
Knoxville, Tennessee 37901
Phone: (865) 974-0250, fax: (865) 974-0264
E-mail: conferences@tennessee.edu
Web Site: www.outreach.tennessee.edu/conferences
University Conference Center

Norvel Burkett, Associate Dean and Director
Robert Gibbs, Assistant Director

The University Conference Center, managed by the Department of Conferences, offers quality meeting facilities and service to university units, business and industry groups, professional organizations, and government agencies. Professional groups and interested individuals can request interactive videoconferencing to locations worldwide. Arrangements can also be made to receive (downlink) or transmit (uplink) programming via satellite. The University Conference Center is located at 600 Henley Street in downtown Knoxville. Additional information may be obtained from:

University of Tennessee Conference Center
Suite 212
Knoxville, Tennessee 37996
Phone: (865) 974-0250, fax: (865) 974-0264
E-mail: conferences@tennessee.edu
Web Site: www.outreach.tennessee.edu/conferences

English Language Institute

Jim Hamrick, Director

The English Language Institute (ELI) offers a non-credit language-study program. It is designed to assist students in their pursuit of career goals or educational objectives in the United States. The courses emphasize development of communicative ability in listening, speaking, reading, and writing. Faculty members are trained in teaching English to speakers of other languages and different national backgrounds, with varying proficiency in English.

The curriculum consists of eight proficiency levels: 101-108, Introductory through Pre-Academic.

Classes meet 3-5 periods each day with emphasis on English Structure (Grammar); Listening Comprehension, Writing/Composition (Rhetoric), Conversation Practice for Communicative Purposes, Reading and Vocabulary.

Classes also assist students in pronunciation, test-taking strategies, U.S. culture orientation, and university study skills.

Additional information may be obtained from:

English Language Institute
907 Mountcastle Street
Knoxville, Tennessee 37996-3505
Phone: (865) 974-3404
Fax: (865) 974-6383
E-mail: eli@tennessee.edu
Web Site: www.outreach.tennessee.edu/ELI

Professional and Personal Development

Gayle Cooper, Assistant Dean and Director
Nissa Dahlin-Brown, Assistant Director

Professional and Personal Development provides a comprehensive array of non-credit courses, certificates, and seminars designed to serve the needs of individuals and businesses in Knoxville and surrounding communities. Courses are offered on the University campus, at off-campus locations, and on-line. They are taught by university faculty, staff, and community experts. Courses also are delivered on-site for business clients, with instructional services tailored to the needs of each group.

Business topics include professional development, career planning, computer training, and small business development. Personal interest topics range from business and computers to art, dance, gardening, music, and sports. There are also courses that meet requirements of the state or other agencies for certification in real estate and financial planning.

Special programming also includes Kids U, providing summer hands-on workshops for elementary and secondary education students; Seniors for Creative Learning, a membership-based program focusing on issues and courses for senior adults; and the Smoky Mountain Field School, a program co-sponsored with Great Smoky Mountains National Park.

For further information or to register, contact:
Professional and Personal Development
1534 White Avenue
Knoxville, Tennessee 37996-1526
Phone: (865) 974-0150
Fax: (865) 974-0154
E-mail: ProfessionalPgms@tennessee.edu
Web Site: www.outreach.tennessee.edu/ppd

Department of Distance Education and Independent Study

George H. Hoemann, Assistant Dean

The Department of Distance Education and Independent Study, in concert with academic departments, offers Internet-based, Web-delivered classes, and programs leading to certificates and degrees. The College of Communication and Information and the College of Engineering offer Master’s degree programs through Web-based courses, while the Departments of Nuclear Engineering and Statistics offer courses leading to degree and certificate programs. Other undergraduate and graduate classes and programs are available, as well as a variety of individual courses in many disciplines. Current course availability can be found on the Web at anywhere.tennessee.edu.

The department provides services and support for faculty, students, and industry interested in flexibly-delivered education.

The Internet eLearning Institute provides certificate programs, professional development courses and training for information technology professionals or individuals wanting expertise in Internet technology. Courses are offered over the World Wide Web in the areas of e-commerce, Web databases, Web mastering, network systems engineering, administrative technology, technical sales, and instructional technology.

For information and registration forms, contact the Distance Education Program at:
Distance Education and Independent Study
1534 White Avenue
Knoxville, Tennessee 37996-1525
Phone: (865) 974-1534 or (800) 670-8657
Fax: (865) 974-4684
E-mail: DistEducation@tennessee.edu
Web Site: www.outreach.tennessee.edu/DESS
Courses of Instruction

ACCOUNTING (009)

201 Principles of Financial Accounting (3) Introduction to financial accounting theory and practice with emphasis on the role of financial information in business decisions. Prerequisite to all other courses in Accounting.

202 Principles of Managerial Accounting (2) Introduction to managerial and cost accounting concepts with emphasis on use of accounting data by managers in planning operations, controlling activities, and decision making. Prerequisite: 201.

207 Honors: Accounting: Principles of Financial Accounting (3) Introduction to financial accounting theory and practice with emphasis on the role of financial information in business decisions. The course will make extensive use of computer technology for retrieving and analyzing financial information. Eligibility: 28 ACT Composite or 1250 recentered SAT Composite.

311 Financial Reporting and Analysis (3) Theory and practice that underlies the preparation, analysis, and use of financial statements. Prerequisite or Corequisite: Finance 301 and Business Administration 342.

312 Cost Management (3) Cost information for products, services, and how cost information is recorded, analyzed, reported, and used in decision making. Topics include cost concepts and behavior, cost systems, budgeting, activity-based costing and management, and strategic cost management. Prerequisite or Corequisite: Business Administration 342.

411 Financial, Compliance, and Operational Auditing (3) Auditing's role in society from an internal and external perspective, audit methodology, role of internal control and statistical sampling in auditing, fraud auditing, operational auditing, compliance auditing, and application of auditing procedures to specific transaction cycles. Prerequisite: 202.

414 Advanced Financial Reporting (3) Accounting standards for advanced financial reporting topics such as statement of cash flows, income taxes, leases, accounting changes, consolidated financial statements, and foreign operations. Prerequisite: 311 with a C or better.

415 Governmental and Nonprofit Accounting (3) Advanced study of governmental and nonprofit entities. Governmental accounting principles, revenues and expenditures, budgeting, and financial reporting. Accounting principles and reporting models of nonprofit organizations. Integration of economic and social issues with reporting standards for governmental and nonprofit organizations. Prerequisite: 414 or permission of the instructor.

431 Federal Income Taxation (3) Fundamentals and concepts of federal income taxation. Emphasis on tax strategy, business taxation, and individual taxation. Topics include tax strategy modeling, gross income, deductions, credits, tax determination, property transactions, business entities, and basics of international taxation. Prerequisite: 311 with a C or better or consent of instructor.

451 Operational Auditing and Consulting (3) Approaches auditors might use to evaluate an entity's efficiency and effectiveness in a variety of settings and techniques auditors might use in consulting to provide the entity a competitive advantage.

492 Accounting Internship (1-6) Satisfactory/No Credit grading only. Prerequisite: Consent of instructor.

AEROSPACE ENGINEERING

See Engineering Aerospace.

ADVERTISING (012)

250 Advertising Principles (3) Survey of the role of advertising in American business and society. Relationship between advertising and marketing; functional components of the advertising process: research, media, creative, and management.

340 Advertising Research Methods (3) Secondary data and primary research techniques for advertising decisions. Prerequisite: 250 and Statistics 201.

350 Advertising Creative Strategy (3) Basic concepts of creative strategy with intensive practice in developing creative platforms, writing and designing advertisements, and judging creative work. Prerequisite: 250, Communication 100 or Speech Communication 100.

360 Advertising Media Strategy (3) Assessment of markets, vehicle audiences and mathematical techniques for advertising planning. Instruction in media planning, buying, and evaluation. Prerequisite: 340.

380 Advertising Professional Seminar (1) Exploration of career choices in mass communications. Resume and letter writing, interviewing, and portfolio preparation. Prerequisite: Progression as a major in the School of Advertising and Public Relations.

450 Advertising Management (3) Case-study approach to advertising decisions. Data analysis and interpretation, generating alternative strategies, oral and written presentation of recommendations. Prerequisite: 350 and 360.

470 Advertising Campaigns (3) Group-based development, execution and evaluation of an advertising campaign for a regional or national client. Prerequisite: 450.

480 Advertising Issues (3) Examination of the role of advertising in society and controversies surrounding economic, social, cultural and ethical aspects of advertising. Emphasis on written and oral exposition of different viewpoints. Prerequisite: 340.

490 Special Topics (3) Detailed study of a specialized area of advertising. Topics vary by semester and include advanced media strategy, advanced creative strategy, direct marketing, and multicultural advertising.

492 Advertising Practicum (1) Experience in a functional area of advertising. Ten hours laboratory each week. May be repeated once. Prerequisite: Progression as a major in the School of Advertising and Public Relations. Satisfactory/No Credit grading only.

493 Independent Study (1-3) Individual study in a specialized area under the supervision of a faculty member. Prerequisite: Consent of instructor.
AFRICAN AND AFRICAN-AMERICAN STUDIES (022)

162 Art of Africa, Oceania, and Pre-Columbian America (3) (Same as Art History 162.)

201 Introduction to African-American Studies (3) Multidisciplinary approach to the African-American experience through the Civil War period which examines such issues as traditional African social structures, the institution of slavery, the development of African-American culture, the beginnings of African-American protest tradition, and the Civil War and Reconstruction.

202 Introduction to African-American Studies (3) Multidisciplinary approach to the African-American experience from the Civil War through the Civil Rights era which focuses on such topics as African-American rural and urban societies, the African-American church and education and African-American intellectual and protest movements.

233 Major Black Writers (3) (Same as English 233.)

235 Introduction to African Studies (3) Multidisciplinary approach to the study of African traditions, cultures, religions, political economies, precivilizational democracies, and states form the first through the sixteenth century.

236 Introduction to African Studies (3) The Multidisciplinary study of Africa and its incorporation into the world economy between the sixteenth and the twentieth century. Includes the rise of nationalism, post-colonial dependency, contemporary problems, and current liberation struggles in various areas of the continent.

310 Introduction to African-American Music (3) (Same as Music History 310.)

315 The African Diaspora (3) (Same as Anthropology 315.)

319 Caribbean Cultures and Societies (3) (Same as Anthropology 319 and Latin American Studies 319.)

331 Race and Ethnicity in American Literature (3) (Same as English 331.)

333 Black American Literature and Aesthetics (3) (Same as English 333.)

343 Race and Ethnicity (3) (Same as Sociology 343.)

350 History of Jazz (3) (Same as Music History 350.)

352 African-American Religion in the United States (3) (Same as Religious Studies 352.)

353 Topics in African-American Religion (3) (Same as Religious Studies 353.)

364 Contemporary Issues in African-American Education (3) 1954 to the present. Examines issues relevant to the current dilemma of providing quality education for the African-American student including professional school quotas, intelligence testing, homogeneous grouping, African-American college survival, busing, Black English/Standard English controversy. Writing-emphasis course.

371-372 African History (3,3) (Same as History 371-372.)

373 African Religions (3) (Same as Religious Studies 373 and Anthropology 373.)

379 Geography of Africa (3) (Same as Geography 379.)

381 History of South Africa (3) (Same as History 381.)

420 Family Diversity (3) (Same as Child and Family Studies 420.)

421 Comparative Studies in African and African-American Societies (3) Comparative studies of African and African-American societies in such areas as education, religion, and social stratification. Includes the respective views African-Americans and Africans have of each other and the concept of Pan-Africanism. Writing-emphasis course. (Same as History 421.)

429 History and Philosophy of African-American Education (3) Focuses on attempts by African-Americans to secure an education for themselves and their children from the era of slavery to the Brown decision in 1954. Examines black perceptions of the importance of education and special obstacles confronting African-Americans who seek education on the primary, secondary, college or graduate level. Writing-emphasis course.

431 Research Seminar in African-American Studies (3) Teaches basic approaches to the research process and development of research skills. Students design and implement a research project of their choice in the field of African-American Studies. Prereq: 201-202 and senior standing. Writing-emphasis course.

442 Comparative Poverty and Development (3) (Same as Sociology 442.)

443 Topics in Black Literature (3) (Same as English 443.)

445 The African-American Experience From the Colonial Period to the Present (3) (Same as History 445.)

450 Issues and Topics in African-American Studies (3) Topics vary, but include a variety of problems, issues, and individuals from the field of African-American Studies. May be repeated. Maximum 6 hours.

452 African-American and African Politics (3) (Same as Political Science 452.)

461 Art of Southern and Eastern Africa (3) (Same as Art History 461.)

462 Art and Archaeology of Ancient Africa (3) (Same as Art History 462.)

463 Arts of the African Diaspora (3) (Same as Art History 463.)

473 Black Male in American Society (3) Examines historical images, myths and stereotypes which have developed concerning African-American males in American society. Includes the impact of such critical factors as Black feminism, violence, concepts of masculinity, the family, white males, white females, homosexuality, nationalism, and athletics on African-American males in America.

480 African-American Communities in Urban America (3) Evaluates the benevolent and historical influence of three major institutions: the church, the family, and the schools upon the African-American struggle to survive. Includes political, economic, and social factors utilized by Black people in developing coping strategies and mechanisms. Writing-emphasis course.

483 African-American Women in American Society (3) Focuses on historical and contemporary social, economic and political factors in American society as they relate to the Black woman. (Same as Women’s Studies 483.) Writing-emphasis course.

491 Foreign Study (1-15) Prereq: 201-202 and consent of instructor.

492 Off-Campus Study (1-15) Prereq: 201-202 and consent of instructor.

493 Independent Study (1-15) Prereq: 201-202 and consent of instructor.

496 Biology of Human Variability (3) (Same as Anthropology 496.)

AGRICULTURAL AND EXTENSION EDUCATION (042)

201 Field Experience in Agricultural and Extension Education (1) Field observation/experience in potential agricultural and extension education career fields. Grade requirements: daily journal, formal written report, complete required hours, seminar. Prereq: Consent of instructor (may include off-campus experience). May be repeated for changing concentrations.

211 Foundations of Agricultural and Extension Education (3) History and philosophy of agricultural education and extension education. Major areas of emphasis include, the historical development of agricultural education in the public schools and the federal extension education system. Formal and non-formal methods of education used, audiences served, organizational structure, and programming emphases will be studied by students. Foundation course for departmental majors and service course for those interested in related careers.

301 Non-Formal Youth Development Programs (1-2) Structured experience in administering, organizing, coordinating, and evaluating youth education programs in agricultural and extension education. Prereq: Consent of instructor.

345 Agricultural Education and Program Planning (3) Overview of the historical and philosophical aspect of agriculture education, the role of teacher and learner, emphasis on SAE, FFA, community service, and summer programs. Prereq: 201, 211 or consent of instructor.

346 Instructional Strategies for Teaching Agricultural Education (3) Methods and techniques for teaching agriculture, preparing lesson plans and units of instruction, developing activities for agriculture programs, and utilization of resources, multimedia, and computer technology into instruction. Prereq: 201, 211, 345 or consent of instructor.

420 Methods of Teaching Agricultural Mechanics (2) Methods for teaching high school agricultural education students. Special competencies for planning, conducting and evaluating an agricultural mechanics program. Prereq: Biosystems Engineering Technology 202 or consent of instructor.


492 Internship In Agricultural and Extension Education (1-6) Pre-approved off-campus supervised experience in county Extension offices, agricultural businesses, or agricultural related agencies. (Requires living off-campus for a specified time.) May be repeated up to a maximum of 6 hours. Prereq: 211, or consent of Instructor.

493 Independent Study (1-3) Individualized study of a special project or problem in Agricultural and Extension Education. Must be selected in consultation with the instructor. Prereq: Consent of instructor. May be repeated for credit. Maximum 6 hours.

AGRICULTURAL ECONOMICS (047)

110 Opportunities in Agricultural Economics and Business (1) Overview of current issues and career opportunities. For majors and non-majors.

210 Introduction to Agricultural Economics (3) Application of economic principles of demand, supply, price determination, and market structure to agriculture, natural resources, rural community development, and international trade and development. Economic aspects of current issues and problems associated with production, marketing, consumption, resource use, and government intervention in the agricultural, rural, and international sectors. Prereq: Economics 201.

212 The Agribusiness Firm (3) Introduction to agribusiness firm characteristics and decisions-making. Overview of economic principles and the basic functions of management: planning, organizing, controlling, and directing. Specific topics include farm structure, forecasting, marketing and selling, budgeting, break-even analysis, use of financial statements, capital investment, supervision, staffing, and evaluation.

310 The Agricultural Employment Process (1) Career planning, job markets in the agricultural industry, and techniques to obtain employment including recruitment/placement services, resume construction, personal interviewing, and job offer evaluation/analysis.

320 Agricultural Microeconomics (3) Application of microeconomics to agriculture. Production, consumption, farm behavior, and efficiency in the food and fiber industries. Prereq: 212 and Economics 201.

330 Economics of Agricultural Biotechnology (3) Analysis of economic issues and impacts associated with the development and adoption of agricultural biotechnology, especially the introduction of genetically modified organisms. Specific topics include farm level adoption decisions, changes in agribusiness industry structure, changes in the marketing system, consumer attitudes and the role of labeling, international trade issues, and agricultural development in the Third World. Prereq.: Economics 201 and Junior standing.

337 Honors: Economics of Agricultural Biotechnology (3) Meets at same time as Economics 330 but requires additional work in the form of article reviews and a research paper. Prereq: Economics 201 and Junior standing.
432 Farm Business Management I (3) Principles and procedures for determining most profitable business organizations and systems of operation; attention to traditional and nontraditional agricultural enterprises and businesses; nature of managerial processes; business records and their uses; budgeting; acquisition and management of capital, land, labor and machinery; farm business planning. Prereq: 212 and Economics 201.

350 The Agricultural Marketing System (3) Survey of U.S. food and fiber marketing system; marketing functions; industry structure; market channels; marketing options of farmers; basic analysis of marketing problems. Prereq: 212 and Economics 201. 

355 Agribusiness Marketing and Professional Selling (3) Role of marketing in the agribusiness organization, planning marketing efforts, and the strategic selling process. Topics include identification of market opportunities, targeting, marketing mix, and personal selling in agribusiness. Prereq: 212 and Economics 201. 

356 Marketing Team Participation (1-2) Participation in the development of a total marketing plan for a product sold to on-farm businesses. Includes product identification, market research, and development of an action plan including an extensive promotional plan, financial analysis, and evaluation. Requires preparation of final plan for presentation in written, oral and visual formats. Plan presented in national competition during the National Agri/Marketing Conference. May be repeated up to a maximum of 6 hours. Prereq: Consent of instructor. 

360 Rural Economic Development (3) Use of economic principles and analytical concepts in understanding the theory and process of rural economic development at the regional and subregional levels. Integrating historical and current information, students will explore the impetus of efficiency and equity as driving forces behind public sector and private sector initiatives to induce, manage and forecast development. Prereq: Economics 201. 

410 Seminar in Agricultural Economics and Business (1) Restricted to Agricultural Economics and Business majors in their senior year. Practice of critical thinking, ethical behavior, teamwork, and conflict resolution within the content of agronomic business decision making. Analysis of contemporary issues in the field of agricultural economics.

412 Agricultural Finance (3) Macro-finance, financial objectives, acquisition of debt and equity funds, capital investments, capital allocation, debt repayment, credit analysis, borrowing and repaying, lender loan application analysis, insurance strategies, computer applications, kinds and sources of agricultural credit, and financial intermediation. Prereq: 212 and Economics 201. 

420 International Agricultural Trade and Marketing (3) Introduction to real and monetary aspects of international trade effect on agricultural commodity flows; partial equilibrium analysis of international trade in agricultural products, institutional aspects of international marketing of agricultural products. Prereq: 320 or consent of instructor.

430 Agricultural Policy (3) Values, goals and policy process. Historical development and current characteristics of commodity, credit, food, and trade policy. Prereq: 320 or consent of instructor. 

442 Agribusiness Management (3) Applications of advanced decision analysis concepts and tools to analyze management decision problems in farm and nonfarm agribusiness settings. Case study work on strategic planning; assessing cost structure using budgeting and break even analysis; evaluating profitability, liquidity, and solvency using financial statements; analyzing investments using capital budgeting; etc. Prereq: 342 or consent of instructor. 

450 Agricultural Industry Analysis and Forecasting (3) Analytical tools for decision making in the agricultural sector; analysis of commodity supply and demand conditions; economic modeling; market forecasting; analysis of temporal and spatial patterns. Prereq: 320 and Statistics 201 or consent of instructor. 

470 Natural Resource Economics (3) Nature of natural resources; economic efficiency as a basis for natural resource use; externalities in natural resource use; factors influencing environmental quality; alternative public policy tools for influencing natural resource use or improving environmental quality. Prereq: 320 or consent of instructor. 

492 Off-Campus Internship (1-3) Pre-approved supervised experience with firm or organization in the field. May be repeated for a different experience up to a maximum of 6 hours. Prereq: Junior standing or consent of advisor. Satisfaction/No Credit grading only.

493 Independent Study (1-3) Directed individual or team research and report writing. Special courses in specific topics. Student must arrange with instructor before registering. May be repeated up to a maximum of 6 hours. Maximum 6 hours. Prereq: Junior standing. 

Agriculture and Natural Resources (088)

100 Orientation to Studies in Agriculture and Natural Resources (1) Orientation to academic advising and procedures in, and information about the College will be emphasized. Various invited guests will review University resources available to help students succeed at their studies. Student-to-student and advisor-to-student sessions are included to discuss the CASNR experience. Enrollment is restricted to freshmen and transfer sophomores. Satisfaction/No Credit grading only. 

290 Computer Applications to Problem Solving (3) Use of computer technology to analyze and report problems related to agricultural sciences and natural resources. The use and interpretation of computer applications such as spreadsheets, database management, graphics, word processing, and other applicable software as needed for problem analysis and reporting. Prereq: Satisfaction performance on a skills/placement test. For details, see advisor. 2 hours and 1 lab. 

317 Agriculture and Natural Resources Honors Seminar (1) Discussion of selected topics, issues, and problems influencing national and international food, agriculture, and natural resources systems. Primarily for College Scholars students. May be repeated. Maximum of 4 hours. Satisfaction/No Credit grading only. 

333 Food, Forests and the Environment (3) Overview of the environmental tradeoffs that have been, are, and will be required to produce the food, fiber and other products needed to feed, clothe, and house a growing world population. Topics to include basic natural resources, crop- and animal-based systems, forestry, and food handling, and practices related to quality of life issues, such as wildlife and landscape design. This course may not be used by College of Agricultural Sciences and Natural Resources students to satisfy directed elective requirements.

491 International Experience in Agriculture and Natural Resources (1-15) Credit for international experiences related to agricultural sciences and natural resources. Determination of credit based on nature of the proposed experience. Students should discuss the opportunity with their faculty advisor prior to the trip to determine if it is appropriate for credit. Credit hours will be determined by the department and college depending on the extent of activity and types of projects and/or presentations to be completed by the student upon return. Letter grade or Satisfactory/No Credit grading. 

497 Honors Independent Project (1-6) For students participating in the CASNR Honors Research and Creative Achievements Program. Consists of independent work with a faculty member. Prereq: Participation in the CASNR Honors Program. 

498 Honors Presentation (1) For students participating in the CASNR Honors program. Final written report and oral presentation of the honors project. Prereq: Participation in the CASNR Honors Program. 

Aircle Force Aero Space Studies (094)

101-102 The Air Force Today (1,1) Survey that focuses on the organizational structure and missions of the Air Force; officership and professionalism; and includes an introduction to aeronautical sciences and aerospace skills. A weekly Leadership Laboratory (LLAB) consisting of Air Force customs and courtesies, health and physical fitness, and drill and ceremonies is mandatory. 

103-104 Leadership Laboratory (1,1) Includes a study of Air Force customs and courtesies, drill and ceremonies, and giving military commands; instructing, correcting, and evaluating the preceding skills; studying the environment of an Air Force officer; and learning about opportunities available to commissioned officers. Satisfaction/No Credit grading only. 

201-202 The Development of Air Power (1,1) Focuses on factors contributing to the development of air power from its earliest beginnings through two world wars; the evolution of air power concepts and doctrine; and a assessment of communicative skills. A weekly Leadership Laboratory (LLAB) consisting of Air Force customs and courtesies, Air Force environment, drill and ceremonies, and field training orientation is mandatory. 

203-204 Leadership Laboratory (1,1) Includes a study of Air Force customs and courtesies, drill and ceremonies, and giving military commands; instructing, correcting, and evaluating the preceding skills; studying the environment of an Air Force officer; and learning about opportunities available to commissioned officers. Satisfaction/No Credit grading only. 

205 Field Training (Academic Program) (1,4) Role of United States military forces in contemporary world, with particular attention to the United States Air Force, its organization and mission, various component forces of U.S. military power, organization of America’s defense structure, policies of major powers, and elements and processes in making of defense policy. Conducted at Field Training bases throughout the country. Open only to two-year program applicants. 

301-302 Air Force Leadership and Management (3,3) Study of leadership and quality management fundamentals, professional knowledge, leadership ethics, and communicative skills required of an Air Force officer. Case studies are used to examine Air Force leadership and management demonstrations as a means of demonstrating the value of leadership in the execution of the concepts being studied. A mandatory weekly Leadership Laboratory (LLAB) provides advanced leadership experiences in office-type activities and gives students the opportunity to apply leadership principles in a small group environment. 

303-304 Leadership Laboratory (0,0) Consists of activities classified as advanced leadership experiences. They involve planning, organizing, staffing, coordinating, directing, and controlling the military activities of the cadet corps; preparation and presentation of briefings and other oral and written communications; and providing interviews, guidance, and information which will increase the understanding, motivation, and performance of other cadets. 

401-402 National Security Forces in Contemporary American Society (3,3) Examines the need for national security, analyzes the evolution and formulation of the American defense policy, strategy, and joint doctrine; investigates the methods for managing conflict; and overviews regional security, arms control, and terrorism. Special topics of interest focus on the military as a profession, officership, the military justice system, and current issues affecting within military professionalism. Within this structure, continued emphasis is given to the refinement of communicative skills. A weekly Leadership Laboratory (LLAB) consisting primarily of advanced leadership experiences in office-type activities is mandatory. 

403-404 Leadership Laboratory (0,0) Consists of activities classified as advanced leadership experiences. They involve planning, organizing, staffing, coordinating, directing, and controlling the military activities of the cadet corps; preparation and presentation of briefings and other oral and written communications; and providing interviews, guidance, and information which will increase the understanding, motivation, and performance of other cadets. 

American Studies (099)

310 Introduction to American Studies (3) Explores dynamics and nature of the culture(s) of the United States through and interdisciplinary study and interpretation. Considers both "mainstream" and "minority" cultures. Writing emphasis course. 

312 Popular Culture and American Politics (3) (Same as Political Science 312.) 

320 American Cultures (3) (Same as Anthropology 320.) 

334 Film and American Culture (3) (Same as Cinema Studies 334 and English 334.)
343 Race and Ethnicity (3) (Same as Sociology 343.)
345 Collective Behavior and Social Movements (3) (Same as Sociology 345.)
355 Religion and Culture in the United States (3) (Same as Religious Studies 355.)
356 The 1960s in America (3) (Same as History 356.)
381 Introduction to Folklore (3) (Same as English 381.)
410 Topics in American Culture (3) Content varies. May be repeated once.
420 Political Attitudes and Behavior (3) (Same as Political Science 420.)
423 Geography of American Popular Culture (3) (Same as Geography 423.)
442 American Humor (3) (Same as English 442.)
450 Seminar in American Studies (3) Intensive study of a major issue in American Studies scholarship.
469 Freedom of Speech (3) (Same as Speech Communication 469).
491 Foreign Study (1-15)
492 Off-Campus Study (1-15)
493 Independent Study (1-15)

ANIMALSCIENCE(113)

160 Introduction to Animal Science (3) Preparation of academic plans and career discussion. Introduction to structure and production principles of the food animal and horse industries. Overview of companion and alternative livestock. Market classes and grades of cattle, poultry and poultry products, lamb and wool, and swine. 3 labs.
220 Anatomy and Physiology of Farm Animals (3) Skeleton and joints; muscles; blood and microcirculation; the nervous, endocrine, cardiovascular, respiratory, and digestive systems; demonstrations of physical-chemical phenomena. Prereq: Biology 120 or 130. 2 hours and 1 lab.
280 Biotechnology and Management Practices in Animal Production (3) Exposure to current animal agriculture management practices and biotechnology techniques as they affect beef, dairy, horse, poultry, sheep and swine industries. Includes animal behavior, restraint and welfare, computer applications, nutrients and nutrient utilization, waste management, food safety, animal reproduction, health and well being, and emerging technologies and opportunities in animal agriculture. 2-3 hour labs.
285 Horse Handling and Care (3) Proper procedures for horse-human interaction and the recommended management procedures for horse care. The basic behavioral characteristics of the horse, an understanding of his physical and mental parameters and their use in horse-human communication. Interactions include imprinting, haltering, halter training, lungeing, long-line driving, bridling, bitting, round pen training, saddling and teaching to guide. Basic care includes feed selection and management, post-natal care, restraint, foot care, dental care, grooming, loading and trailerling, stall maintenance, internal and external parasite control, exercising, identification techniques, routine vaccinations and first aid. Safety for both horse and handler will be emphasized. 3-2-3 hours labs.
320 The Physiology of Reproduction and Lactation (3) Biology of sex and sexual differentiation, functional anatomy of male and female, reproduction and lactation, gametogenesis, neuroendocrinology and endocrinology of reproduction and lactation, sex cycles, folliculogenesis, ovulation, spermatogenesis, fertilization, embryonic development, implantation, parturition, initiation of lactation and maintenance of the dry period, artificial control of reproduction and lactation. Prereq: Biology 102 or 130. 2 hours and 1 lab. (Same as Biochemistry and Molecular Biology 320.)
340 Principles of Animal Breeding (3) Genetic and environmental bases of animal variation. Selection and mating systems as mechanisms of genetic change. Planning breeding programs for economically important domestic species. 2 hours and 1 lab.
362 Dairy Cattle Evaluation (2) Comparative judging, oral reasons, breed classification programs, economic value of conformation traits. Prereq: 160. 2 labs.
364 Horse Evaluation (2) Evaluation of horses for soundness and functional efficiency and the relationship of form to function in various breeds of horses. 2 labs.
380 Animal Health Management (3) Characteristics, symptoms, prevention, and treatment of major diseases and parasites. Immunization, health regulations and herd health programs for all farm livestock species and poultry. Prereq: AS220. 2 hours and 1 lab.
381 Animal Nutrition and Production Systems (3) Fundamentals of production and management systems with an emphasis on nutrition in beef, dairy, pork, and poultry programs. Application of principles of nutrition, breeding, physiology, and marketing into enterprise systems. Decision making management practices and information resources, enterprise evaluation, and comparison of production systems. 2 hours and 1 lab. No credit for majors.
395 Careers Seminar (1) Preparing students for career opportunities in animal agriculture including both industry and academic advancement. Topics will include resume preparation, interview skills, internship opportunities, and web-based employment search guides. Prereq: Junior standing.
420 Advanced Reproduction (3) Collection, evaluation, and preservation of ova, spermatozoa and embryos; application of methods of natural breeding and techniques of artificial insemination and embryo transfer; herd sire and dam evaluation; pregnancy determination; gestation and parturition; infertility; recent advances in theriogenology. Prereq: 320. 1 hour and 2 labs.
430 Nutrient Evaluation and Ration Formulation (3) Ration nutrient analysis and formulation for beef and dairy cattle, sheep, horses, swine poultry, laboratory, zoo and companion animals. Mathematics and computer solutions and applications to formulating complex rations with constraints. Prereq: Animal Science 330 and introductory computer course. 2 hours and 1 lab.
461 Advanced Beef Cattle, Dairy Cattle, Horse, Poultry, Sheep and Swine Judging (1) Specialization in judging; evaluation, selection and presentation of oral reasons for classes of beef cattle, dairy cattle horses, poultry, sheep, and swine. Prereq: Consent of instructor. 2 labs. Satisfactory/No Credit grading only.
481 Beef Cattle Production and Management (3) Integration of principles of nutrition, breeding, physiology, and marketing into complete production and management programs. Structure of industry, enterprise establishment, systems of production, production practices and herd improvement programs. Alternatives evaluated in terms of production responses and economic returns. Prereq: Completion of Animal Science sophomore and junior core courses or consent of instructor. 2 hours and 1 lab.
483 Pork Production and Management (3) Integration of principles of nutrition, breeding, physiology, and marketing into complete production and management programs. Structure of industry, enterprise establishment, systems of production, production practices, and improvement program. Management evaluated in terms of production responses and economic returns. Prereq: Completion of Animal Science sophomore and junior core courses. 2 hours and 1 lab.
484 Poultry Production and Management (3) Integration of principles of nutrition, breeding, physiology, and marketing into complete production and management programs. Structure of industry, enterprise establishment, systems of production, production practices, and improvement programs. Management evaluated in terms of production responses and economic returns. Prereq: Completion of Animal Science sophomore and junior core courses. 2 hours and 1 lab.
485 Horse Production and Management (3) Integration of principles of nutrition, breeding, physiology and ethology into complete production and management programs. Types of enterprises, management of feed and pasture resources, health maintenance and first aid, breeding and foaling, farm structures and equipment. Prereq: Consent of instructor. 2 hours and 1 lab.
489 Companion, Zoo and Lab Animal Management (3) Principles of nutrition, physiology, breeding, handling, and history of breeds of common household pets, zoo animals and animals used in scientific research. Specific species requirements and peculiarities. Laws and agencies governing use of laboratory animals. Laboratory analysis of body metabolites commonly used to monitor health and nutritional status. Prereq: Consent of instructor. 2 lectures and 1 lab.
492 Animal Science Field Study (1-6) Off-campus work experience approved by the department. Objective is to compliment traditional classroom activities and give the student an opportunity to gain experience in industry. Students must submit official approval form prior to registration. The student will be evaluated on knowledge and skills and must submit a written summary after program completion.
493 Independent Study in Animal Science (1-3) Approved supervised study in areas not formally presented in a course offered in the department. Written proposal of study is approved by the Department of Animal Science Undergraduate Committee. After completion of study, a written report is required and this report is maintained on file in the reference room of the department. May be repeated for a maximum of 6 credits. Prereq: Senior standing and consent of instructor and department head.
494 Animal Science Teaching Assistant (1) Assist the primary instructor in laboratory instruction and demonstrations. Prereq: Senior standing and consent of the instructor and department head. Satisfactory/No Credit grading only.
495 Ethics in Animal Agriculture (1) Discussion and presentations on issues related to ethics in animal research and industry. Prereq: Senior standing.
111 Architecture and the Built Environment (3) An introduction to architecture and the built environment for non-architecture majors. Significance of our surroundings, forces that create them. Creative aspects of design. Survey of examples from local to global. Strategies for individual and collective involvement.

121 Drawing and Perceptual (2) Exploration of drawing as a means of visual thinking and method of communication, addressing perceptual phenomenon. Exploration of different media, concentrating on freehand drawing. Includes line drawing, tone, shade, shadow, depth cues. Compositional principles will be introduced. Drawings based on observation, abstraction, and transformation. Coreq: 172.

122 Drawing and Abstraction (2) Exploration of drawing as a means of visual thinking and method of communication, addressing process of abstraction and transformation inherent in drawing. Exploration of different media and techniques of representation. Drawings based on observation, abstraction, and transformation. Coreq: 172.


180 Introduction to Architecture (2) Introduction to architecture as an intellectual discipline. Design as a creative endeavor central to the discipline and its profession.

181 Introduction to Graphic Skills (4) Introduction to freehand drawing and orthographic techniques emphasizing visualization and simulation. The work will be explored and developed in the studio (4 credit hour studio).

182 Introduction to Basic Design (6) Introduction to basic design principles in both two and three dimensions. The work will be explored in a seminar format and developed in the studio (1 credit hour seminar and 5 credit hour studio).

211 History and Theory of Architecture I (3) Architectural thought and ideas of building and construction based on form, function, place. Historical research using primary material. Early developments in Europe and France and Spain through the late eighteenth century. Prereq: 211.


231 Computer Applications in Design I (3) Introduction to computer systems, software and hardware, and their application in architecture. Emphasis on learning how the computer can assist in the design process by modeling, visualizing and analyzing building designs. Introduction to drafting and 3-dimensional modeling and desktop publishing. Prereq: 232. Prereq: Consent of Instructor.

232 Introduction to Architectural Technology (3) Place of building technology in architectural design. Introduces concepts and theory of structures; building materials and construction; and environmental controls.


272 Architectural Design II (6) Studies in architectural space. The role of function, habituation, movement, structure and scale as determinants of spatial form explored through a series of design projects ranging in scale from sculpture to dwellings. Development of design processes, including analytical skills, diagramming, and determining design organizational strategies. Use of computer aided visualization techniques. Prereq: 271.

281 Principles of Architectural Form (6) Principles of architectural form emphasizing building configuration and order. Design of simple buildings which explore possibilities of site, use, shape, materials and color. 1 credit hour seminar and 5 credit hour studio. Prereq: 182 or equivalent.

282 Principles of Architectural Design (6) Principles of architectural design emphasizing site, function, circulation, structure, technology, context and expression of building (1 credit hour seminar and 5 credit hour studio). Prereq: 281.


312 Architectural Structures II (4) Continuation of analysis and design of simple structures of steel, wood and concrete based upon specific loading requirements. Use of construction and building codes, handbooks and design tables - selection of structural members. Prereq: 311.

334 Advanced Architectural Structures (3) Philosophical study of structural design in relation to materials and form. Advanced mathematical and experimental analysis of structures, including use of computer programs. Prereq: 323 or equivalent.

335 Structures in Architecture I (3) Introduction to the structural properties of materials, foundations and simple statically determinate assemblies of buildings. Prereq: 180 and M. Arch Admission.

336 Structures in Architecture II (3) Continuation of analysis and design of simple structures of wood, steel and concrete. Introduction of building codes, loading tables and handbooks for selection of structural members. Prereq: 335 or special permission.


343 Principles of Environmental Control I (3) Introduction to heating, ventilating, air conditioning, solar energy, plumbing, fire-protection systems. Prereq: 180 and M. Arch Admission.

346 Principles of Environmental Control II (3) Introduction to electrical design and wiring, lighting, and acoustics. Prereq: 180 and M. Arch Admission.


401 Architectural History/Theory I (3) Architectural History/Theory I (3) Survey of architectural history and theory from earliest beginnings to about 1600. Chemical Engineering in Europe, Asia, and the Americas. Examination of theoretical ideas, building forms, and urban patterns in cultural and historical context. Prereq: M. Arch admission or consent of instructor.

402 Architectural History/Theory II (3) Architectural History/Theory II (3) Survey of architectural history and theory from about 1600. Chemical Engineering through the present day. Examination of theoretical ideas, building forms, and urban patterns in cultural and historical context. Prereq: 401, and M. Arch admission or consent of instructor. Open to undergraduates with consent of instructor.

403 Introduction to Preservation (3) History, theory, and legal aspects of architectural preservation and restoration.

404 Preservation Technology (3) Techniques of preservation: methods of analysis, history of materials and technology used in old buildings. Prereq: 403.

405 Descriptive Analysis of Historic Buildings (3) Identification and analysis of characteristic elements of buildings from various architectural periods, with emphasis on American architecture. Survey techniques.

406 Ideas in Architecture (3) Historical and critical review of the major ideas of architecture through the ages. Open to all students.

410 History and Theory of Urban Form (3) Patterns of community development. Selected historical and contemporary examples. Basic urban design issues and exemplary design approaches examined through lectures, readings, essays, and sketch studies including historical and current urban form design. Prereq: 410.

412 Non-Western and Indigenous Architecture (3) Building responsive to climate, material availability, and economic level, as designed by anonymous builders. Examples from prehistoric times to the present including the fertile Crescent; the Indus Valley; Hindu, Buddhist, and Mughal architecture of India, China, and Japan.

413 Tennessee Architecture (3) History of settlement patterns and building in Tennessee. Selected examples examined through reading assignments, lectures, discussion, and field trips. Historical research using primary material.

414 History of Architectural Technology (3) Building materials and construction techniques from antiquity to the present.

415 Medieval Architecture (3) History of architecture from the decline of Rome to the Reformation. Covering periods in Europe through High Renaissance in Italy, France and Spain.

417 The International Style (3) A survey of architecture of the early modern movement, primarily in Europe and America, covering the years 1900 to 1940.


420 American Architecture, 1840-1940 (3) Stylistic periods from the Gothic Revival through the Twentieth Century.

421 History of Landscape Architecture (3) Intellectual, societal, and geographical influences which provide the theoretical basis for design throughout history. Selected examples of landscape architecture analyzed in terms of design.

422 Modern Eastern European Architecture (3) Twentieth century architecture in Russia, Czechoslovakia, Poland, Hungary, East Germany, Rumania, Bulgaria, Yugoslavia.

425 Special Topics in Architecture (1-6) Faculty initiated courses. Topics vary. May be repeated. Maximum credit 12 hours. Prereq: consent of instructor.

431 Structural and Mechanical Applications (3) Case study analysis and selection of structural and mechanical systems, investigating the conceptual integration of technical information into a unified design solution. Prereq: 332, 342. Coreq: 471.

432 Computer Applications in Design II (3) Advanced computer aided design using three-dimensional modeling software. Design analysis using computer animation, rendering techniques, visualization, and video. Prereq: 231.

433 Computer Applications in Design III (3) Advanced course that integrates three-dimensional modeling and technical analysis using computers to augment building design. Independent studies under faculty direction. Prereq: Consent of instructor.

434 Building Energy Analysis (3) Balancing heat flow through external skin of residential and small and large commercial buildings; local climate evaluation; site planning, building size and location, window selection, wall treatment; infiltration control. Energy use quantification methods and economic analysis of energy efficient design features. Architectural program analysis of external and internal load dominated buildings. Prereq: 341.

444 Advanced Environmental Control Systems (3) In-depth analysis and innovative concepts in design of heating, ventilating, and air conditioning. Prereq: 341.
445 Advanced Lighting (3) In-depth analysis and innovative concepts in design of lighting. Prereq: 342.

462 Professional Practice (4) Management and organizational theories and practices for delivering professional design services. Included are assessment of the building industry and its influence on practice; analysis of the basic management functions within professional firms; and legal and ethical concerns facing practitioners today. Special obligations and privileges of the design professional.

463 Architectural Development (3) Principles and practice of the architect as a developer. Impact of economics, finance and urban policy on the design and development of real estate. Open to all students.


472 Architectural Design VI (6) Order and form in complex buildings developed to address programmatic, structural, energy and environmental issues. Prereq: 471.

473 Architectural Photography (3) Photography as a design, research, and presentation medium. Application of photographic techniques, printing and processing. Color, black and white.

480 Comprehensive Design Project I (3) Preparation and Programming for Projects. (3) Formation of project statement, documentation and analysis of project data. Preparation of background and program information. Goals and concepts set forth. To be taken the semester preceding 482.

481 Advanced Architectural Design Topics (6) Faculty initiated design projects. Advanced architectural topics not covered under 483, 484, 485, 486, or 489. Prereq: 471.

482 Self-directed Design Project (6) Student-selected project under faculty direction. Exploration of design hypothesis that informs the character of a substantial building design. Completed project will address issues of environment, structure, enclosure, use and ethical consideration of design appropriateness. Design is expected to stand up to rigorous scrutiny regarding strength of idea, economy of means, durability, validity for stipulated use, quality of craftsmanship, and character of setting. Prereq: 480, satisfactory completion of a self-directed project proposal and program for that project, and satisfactory completion of all design courses.

483 Urban Design (6) Urban design projects responding to specific community conditions. Exploration of urban issues in making and understanding the architecture of the city. Prereq: 471.


485 Development and Design (6) Exploration of image making, consumerism and the allocation of scarce resources. Issues of finance, economics, urban economics, and marketing are analyzed in relation to urban and architectural design. Application of financial feasibility models. Prereq: 471 and 463 or consent of instructor.

486 Design of Sustainable Architecture (6) Architectural design studio emphasizing concern for the environment, consideration of energy conservation techniques, and use of renewable resources. Prereq: 471.


491 Foreign Study (1-15) Study and discussion of contemporary art issues conducted abroad. Analysis and sketch records in sketchbook format required. For Non-majors only. Courses may be repeated, medium may not be repeated. Maximum 12 hours.

492 Off-Campus Study (1-15) Foreign Study (1-15) Prereq: 471.

493 Independent Study (1-15) Prereq: Consent of instructor. May be repeated. Maximum 12 hours.

494 Individual Problems (3) Prereq: Consent of instructor. May be repeated. Maximum 12 hours.

495 Visiting Artist Seminar (2) Study and discussion of contemporary art issues conducted by different visiting artists each semester. (Does not apply toward art history requirement.) May be repeated. Maximum 8 hours.

499 Special Topics (3) Student or instructor-initiated course offered at convenience of department. May be repeated. Maximum 12 hours.
251 Beginning Graphic Design I (3) Introduction to the elements and principles of graphic design including typography and layout. Survey of graphic design, tools, materials, and processes. May be repeated. Maximum 6 hours. Prereq: Art 101 and 103, Art Design/ Graphic 151, all with a grade of C or better.

252 Beginning Graphic Design II (3) Survey of graphic design from concept through production. Emphasis on visual problem-solving. May be repeated. Maximum 6 hours. Prereq: 251 with a grade of C or better.

254 Black and White Illustration (3) Black and white media and production techniques as applied to product and editorial illustration. Prereq: Art 101.

256 Individual Projects in Graphic Design (3) Prereq: Consent of instructor. May be repeated. Maximum 6 hours.

259 Special Topics: Graphic Design (3) Student or instructor initiated course offered at discretion of department. Prereq: Consent of instructor. May be repeated. Maximum 12 hours.

350 Graphic Design Portfolio Review (0) Review of prior work in graphic design. Successful completion required prior to registration for junior and senior courses. Prereq: Art History 172 and 173 with a grade of C or better. Coreq: Art Design/Graphic 252. May be repeated. Satisfactory/No Credit grading only.

351 Intermediate Graphic Design I (3) Concept development and the study of graphic design elements including typography and imagery and their interrelationships within the graphic design layout. Prereq: Art 295. Coreq: Art Design/Graphic 350, 356.

352 Intermediate Graphic Design II (3) Investigation of signs, symbols, marks and identity systems. Prereq: Art Design/Graphic 351 with a grade of C or better.

354 Color Illustration (3) Flat and process color media and production techniques as applied to product and editorial illustration. Prereq: 254 and successful completion of any portfolio review.

356 Graphic Design Production (3) Traditional and computer-generated techniques for the production of print media in graphic design. Introduction to computer systems, software, and techniques.

396 Airbrush Painting (3) Techniques of airbrush painting; skills and creative applications emphasized. Prereq: Art Drawing 211.

405 Computer Enhanced Graphic Design (3) Exploration of new technologies and their significance to graphic design. Prereq: 351, 356 with a grade of C or better and consent of instructor. May be repeated. Maximum 12 hours.

444 Graphic Design Center Practicum (3) Practical work experience in a student-managed, on-site studio. Prereq: 350 and consent of instructor. May be repeated. Maximum 12 hours.

451 Advanced Graphic Design (3) Theory and techniques of visual problem-solving as applied to advanced applications of graphic design. Prereq: 352 with a grade of C or better.

452 Graphic Design Seminar (3) Discussion of design and professional issues including politics, economics, and ethics for the graphic designer. Culminates in a student-initiated project. Prereq: 451 with a grade of C or better.

453 Advertising Illustration (3) Media and techniques as applied to advertising illustration. Prereq: 254 and successful completion of any portfolio review.

454 Editorial Illustration (3) Media and techniques as applied to editorial illustration for books, magazines, and newspapers. Prereq: 254 and successful completion of any portfolio review.

455 Graphic Design Professional Seminar (3) Professional practices including client relationships, design management and business practices. Assembly, organization and editing of the professional portfolio. Prereq: or Coreq: 452.

456 Graphic Design Practicum (3-12) Practical work experience in the graphic design field. Only by pre-arrangement with the department. Prereq: Consent of instructor. May be repeated. Maximum 12 hours.

459 Special Topics in Graphic Design (3) Student or instructor initiated course offered at discretion of department. Prereq: Consent of instructor. May be repeated. Maximum 12 hours.

493 Independent Study (1-15) Prereq: Consent of instructor.

494 Individual Problems (3) Prereq: Consent of instructor. May be repeated. Maximum 12 hours.

495 Visiting Artist Seminar (2) Study and discussion of contemporary art issues conducted by different visiting artists each semester. (Does not apply toward art history requirement.) May be repeated. Maximum 8 hours.

ARTDRAWING (137)

191 Introduction to Studio Art: Various Media (3) Individual sections for various artistic disciplines. For Non-majors only. Courses may be repeated, medium may not be repeated. Maximum 12 hours.


212 Drawing II: Life Drawing (3) Development of drawing and observational skills with special emphasis on structure and dynamics of the human figure and of the figure in environment. Prereq: 211. May be repeated. Maximum 6 hours.

219 Special Topics in Drawing/Painting (3) Student or instructor-initiated course offered at convenience of department to enhance and expand the painting, drawing, and watercolor curriculum. Prereq: Consent of instructor. May be repeated. Maximum 12 hours.

311 Drawing III (4) Development of personal drawing techniques and concepts through class problems. Prereq: 212 and 312 or consent of instructor. May be repeated. Maximum 8 hours. Total of 8 hours required for students in the Drawing concentration.

312 Drawing Portfolio Review (0) Review of prior work in drawing. Successful completion required prior to registration for junior and senior courses. Prereq: Art History 172 and 173 with a grade of C or better. Satisfactory/No Credit grading only.

411 Drawing IV (6) Individualized pursuit of personal drawing techniques and concepts, supervised by individual and group critiques and weekly life drawing sessions. Prereq: 8 hours of Art Drawing 311 with a grade of C or better and consent of instructor. May be repeated. Maximum 12 hours. Total of 12 hours required for undergraduate students in the Drawing concentration.

419 Special Topics in Drawing and Painting (3) Student or instructor-initiated course offered at convenience of department to enhance and expand the painting, drawing, and watercolor curriculum. Prereq: Consent of instructor. May be repeated. Maximum 12 hours.

493 Independent Study (1-15) Prereq: Consent of instructor.

494 Individual Problems (3) Prereq: Consent of instructor. May be repeated. Maximum 12 hours.

495 Visiting Artist Seminar (2) Study and discussion of contemporary art issues conducted by different visiting artists each semester. (Does not apply toward art history requirement.) May be repeated. Maximum 8 hours.

ART EDUCATION (141)

301 Foundation of Art Education (3) Basic philosophy and structure including directed learning activities in two and three dimensional design, art appreciation, and teaching methodology.

302 Multiculturalism in Visual Art (3) Selected cognitive and productive experiences involving multicultural visual art. Prereq: Permission of instructor.

303 Concepts of Sculpture and Crafts (3) Processes in teaching of sculpture and crafts including pertinent literature and research. Prereq: 301.

350 Field Experience (1) Tasks related to teaching and to teacher roles. May be repeated. Maximum 2 hours. Prereq: Admission to Teacher Education Program. Satisfactory/No Credit grading only.

400 Curriculum Planning and Teaching Strategies (3) Program development, instructional methods, art literature, contemporary issues, simulation and micro teaching situations. Prereq: 301 and admission to Teacher Education Program.

ARTHISTORY (139)

161 Oceanic Art (3) Survey of the sculpture, textiles, architecture and other traditional art forms of Polynesia, Micronesia and Melanesia. Objects are discussed on the basis of style, style relationships, iconography and the uses to which they were put in their traditional religious, political or social contexts. Writing-emphasis course.

162 Art of Africa, Oceania, and Pre-Columbian America (3) Survey of the traditional arts of the cultures of Black Africa, the Pacific and the Americas (focusing primarily on the period before the European conquest). Sculpture, painting, pottery, textiles, architecture and human adornment will all be examined. (Same as African and African American Studies 162)

167 Honors: Art of Africa, Oceania, and Pre-Columbian America (3) Consent of instructor required. Survey of the traditional arts of the cultures of Black Africa, the Pacific and the Americas. Study grounded in reading, writing and discussion. Writing-emphasis course.

172 Western Art (3) Major monuments in Western Art with emphasis on Europe from prehistory through the Middle Ages. Two-hour lecture and one-hour discussion each week.

173 Western Art (3) Major monuments in the history of European and American Art from the Renaissance to the present. Two-hour lecture and one-hour discussion section each week.

177 Honors: Western Art I (3) Consent of Department required. Major monuments in Western Art with emphasis on Europe from prehistory through the Middle Ages. Study grounded in reading, writing, and discussion. Writing-emphasis course.

178 Honors: Western Art II (3) Consent of Department required. Major monuments in the history of European and American Art from the Renaissance to the present. Study grounded in reading, writing, and discussion. Writing-emphasis course.

183 Asian Art (3) Selected works of painting, sculpture, architecture, and other forms in India, China, Japan, and to a lesser extent, Korea and Southeast Asia from antiquity through the 19th Century.

187 Honors: Asian Art (3) Consent of instructor required. Selected works of painting, sculpture, architecture and other forms in India, China, Japan, Korea and Southeast Asia, from antiquity through the 19th century. Study grounded in reading, writing, and discussion. Writing-emphasis course.

279 Special Topics in Art History (3) Student or instructor-initiated course offered at convenience of department. Prereq: Determined by department for individual topic. May be repeated. Maximum 12 hours.

276 Seminar in Art History (3) Variable theme: emphasis on methodology and skills in writing. Required for Art History majors. Prereq: junior or senior standing and completion of at least 12 hours in art history, or consent of instructor. May be repeated with consent of instructor for a maximum of 6 hours. Writing-emphasis course.

403 History of Photography (3) Survey of the history of photography from the introduction of the daguerreotype and calotype to more recent trends. Emphasis will be placed on aesthetics and the use of photography as a medium for artistic expression.
411 Art of South and Southeast Asia (3) A survey of the art and architecture of the Indian subcontinent and Southeast Asia from 2000 B.C. to the 20th century. The major achievements of each period are examined in relation to their religious, political, and social contexts. Writing-emphasis course.

415 Art of China (3) A survey of the art and architecture of China from the neolithic period to the 20th century. The major achievements of each period are examined in relation to their religious, political, and social contexts. Writing-emphasis course.

416 Chinese Art of the 20th and 21st Centuries (3) Survey of Chinese art from the late nineteenth century through the present. Hong Kong, Taiwanese, and expatriate artists are also considered. Writing-emphasis course.

419 Art of Japan (3) A survey of the art and architecture of Japan from the neolithic period to the 20th century. The major achievements of each period are examined in relation to their religious, political, and social contexts. Writing-emphasis course.

425 Early Christian and Byzantine Art to 1350 (3) Art in Italy and the Eastern Empire from the beginnings of Christian art to c. 1350. Mosaic and painting, sculpture and architecture. Writing-emphasis course. (Same as Judaic Studies 425.)

431 Medieval Art of the West, 800-1400 (3) Western European art of the “Dark Ages,” Romanesque, and Gothic periods. Writing-emphasis course. (Same as Medieval Studies 381 and Judaic Studies 431.)

441 Northern European Painting, 1350-1600 (3) From courtly art of late Middle Ages to Northern Renaissance. Jan van Eyck, Roger van der Weyden, and Dürer; early printmakers. Writing-emphasis course. (Same as Medieval Studies 372.)

442 Art of Northern Europe, 1600-1675 (3) Concentrated study of Bruegel, Rubens, Rembrandt, Georges de La Tour, Vermeer, Poussin, and Hals. Writing-emphasis course.

451 The Art of Italy, 1259-1450 (3) Development of exploration of naturalism. Revival of antiquity and development of theories of perspective in the Early Renaissance. Including Duccio, Giotto, Masaccio, Donatello, Botticelli. Writing-emphasis course. (Same as Medieval Studies 382.)

452 Art of Italy, 1475-1575 (3) Concentrated study of Leonardo da Vinci, Michelangelo, Titian, Raphael, Pontormo, and Giorgione. Writing-emphasis course.

453 Art of Southern Europe: 1575-1700 (3) Concentrated study of Caravaggio, Bernini, and Italian Baroque. Architectural achievements in all media. Spanish Baroque painting and sculpture, with special attention to Velázquez. Writing-emphasis course.

454 Renaissance and Baroque Theory (3) Addresses the theory of Western art in the early modern period with emphasis on the development and evolution in European art during the Renaissance and Baroque periods. Prereq. 172 and 173 (or their Honors equivalents), or consent of instructor. Writing-emphasis course.

461 Art of Southern and Eastern Africa (3) Art traditions of the eastern and southern regions of Africa. Sculpture, painting, pottery, textiles, architecture and human adornment will be examined. Some ancient Stone and Iron Age traditions will be examined, but the main emphasis will be on the diverse ethnic and regional art traditions practiced in the area from the 19th century to the present. Writing-emphasis course. (Same as African and African-American Studies 461.)

462 Art and Archaeology of Ancient Africa (3) Historical art traditions of sub-Saharan Africa. Topics to be covered include prehistoric rock paintings; art from archaeological sites and ancient kingdoms. The time period covered ranges from the first and second millennia B.C. for some of the early terracotta sculpture and rock paintings, the 11th through 19th centuries A.D. for the later ancient kingdoms. Writing-emphasis course. (Same as African and African-American Studies 462.)

463 Arts of the African Diaspora (3) Examines the aesthetic, philosophical and religious patterns of the African descendants of Brazil, Surinam, the Caribbean and the United States. Emphasis will be placed on the full range of art forms, including the sculptural and performance traditions as well as architecture, textile, basketry and pottery art forms. Writing-emphasis course. (Same as African and African-American Studies 463.)

471 History of North American Art (3) Survey of landmarks in painting, architecture, sculpture, and design from prehistory to 1900. Writing-emphasis course.

472 History of 20th Century American Art (3) Developments in architecture, painting, and design from 1900. Writing-emphasis course.

473 19th Century American Painting (3) From West and Copley to emergence of “The Eight.” Writing-emphasis course.

474 Theory of 20th-Century Art in Europe and America (3) Addresses the theoretical basis for the modern movement. Emphasis on analyzing and discussing individual works of art in light of contemporary writings by artists and theorists. Prereq. 172 and 173 (or their Honors equivalents), or consent of instructor. Writing-emphasis course.


476 History of 20th Century Painting and Sculpture in Europe (3) Development of the Modern Movement in the 20th Century. Movements in Europe. Investigation of the progressions in abstraction through more recent conceptual trends. Analysis of the work of individual artists such as Picasso, Matisse, and many others. Writing-emphasis course.

479 Special Topics in Art History (3) Student or instructor-initiated course offered at convenience of department. May be repeated. Maximum 12 hours.

483 History of American Sculpture (3) American sculpture from prehistory to the 1960’s. Writing-emphasis course.


489 Studies in Art History (3) Concentration in individually selected area. Prereq. Consent of instructor. May be repeated. Maximum 6 hours.

493 Independent Study (1-15) Prereq: Consent of instructor.

494 Individual Problems (3) Prereq: Consent of instructor. May be repeated. Maximum 12 hours.

ART MEDIA ARTS (134)

191 Introduction to Studio Art: Various Media (3) Individual sections for various artistic disciplines. For Non-majors only. Courses may be repeated, medium may not be repeated. Maximum 12 hours.

231 Photography I (3) Art of black and white photography. Field and studio shooting, history of photography, basic developing, and enlarging techniques.

235 Introduction to Cinematography as Art (3) Development of basic concepts and techniques for the creation of film as an art form. Prereq. or Coreq. 231 or consent of instructor. (Same as Cinema Studies 235.)

236 Introduction to Video Art (3) Development of basic concepts and techniques for the creation of video works as an art form. (Same as Cinema Studies 236.)

239 Special Topics in Media Arts (3) Student or instructor-initiated course offered at convenience of department. May be repeated. Maximum 12 hours.

330 Media Arts Portfolio Review (0) Review of prior work in media arts. Successful completion required prior to registration for junior and senior courses. Prereq. Art History 172 and 173 with a grade of C or better. Satisfactory/No Credit grading only.

331 Photography II (4) Individual expression in photographic medium. Prereq. 231. May be repeated. Maximum 8 hours.

341 Digital Photography I (4) Studio course introducing theory and techniques of use of computers in photography. Prereq. 231, 331.

342 Large Format Photography I (4) Studio course introducing theory and practice of photography using large format view camera. Prereq. 231, 311, and 331; and consent of instructor.

431 Photography III (3-6) Individual development of photographic problems and techniques. Prereq. 231 and 331. May be repeated. Maximum 12 hours.

432 History of Modern Art and Film (3) Study of the development and interaction between the cinematic arts and the visual arts within the context of modern art history. Available for Art History credit. (Same as Cinema Studies 433.)

435 Cinematography as Art (3) Continued development of concepts and techniques for the creation of films as an art form with an emphasis on individual projects. Prereq. 235 and consent of instructor. May be repeated. Maximum 9 hours. (Same as Cinema Studies 435.)

436 Video Art (3) Continued development of concepts and techniques for the creation of video works as an art form with an emphasis on individual projects. Prereq. 236 and 330 or permission of instructor. May be repeated. Maximum 9 hours. (Same as Cinema Studies 436.)

439 Special Topics in Media Arts (3) Student or instructor initiated course offered at convenience of department. May be repeated. Maximum 12 hours.

441 Digital Photography II (4) Continuation of exploration and implications of use of computer in photography. Prereq. 341, and permission of instructor.

442 Large Format Photography II (4) Studio course that continues the exploration of the use of the large format camera in photography. Prereq. 342 and permission of instructor.

430 Independent Study (1-15) Prereq: Consent of instructor.

494 Individual Problems (3) Prereq. Consent of instructor. May be repeated. Maximum 12 hours.

495 Visiting Artist Seminar (3) Study and discussion of contemporary art issues conducted by different visiting artists each semester. (Does not apply toward art history requirement.) May be repeated. Maximum 12 hours.

ART PAINTING (138)

191 Introduction to Studio Art: Various Media (3) Individual sections for various artistic disciplines. For Non-majors only. Courses may be repeated, medium may not be repeated. Maximum 12 hours.

213 Painting I: Introduction (3) Capacities of oil and acrylic painting on canvas. Prereq. 101, 103 for art majors; none for non-art majors.

214 Painting II (3) Techniques of expression in oil and/or acrylic. Prereq. Painting 213. May be repeated. Maximum 6 hours.


216 Watercolor II (3) Capacities of transparent watercolor, with attention to individual explorations of surface, space, and concept. Prereq. Painting 215. May be repeated. Maximum 6 hours.

219 Special Topics in Drawing/Painting (3) Student or instructor-initiated course offered at convenience of department to enhance and expand the painting, drawing, and watercolor curriculum. Prereq. Consent of instructor. May be repeated. Maximum 12 hours.

313 Painting III (4) Individual expression with varied media on canvas. Prereq. 214 and 314 or consent of instructor. May be repeated. Maximum 8 hours. Total of 8 hours required for students in the Painting concentration.

314 Painting Portfolio Review (0) Review of prior work in painting. Successful completion required prior to registration for junior and senior courses. Prereq. Art History 172 and 173 with a grade of C or better. Satisfactory/No Credit grading only.
COURSES OF INSTRUCTION

315 Watercolor III (4) Individual expression with varied water-based media on paper. Prereq: 216 and 316 or consent of instructor. May be repeated. Maximum 8 hours. Total of 8 hours required for students in the Watercolor concentration.

316 Watercolor Portfolio Review (0) Review of prior work in watercolor. Successful completion required prior to registration for junior and senior courses. Prereq: Art History 172 and 173 with a grade of C or better. Satisfactory/No Credit grading only.

413 Painting IV (6) Advanced painting stressing individual concepts and personal expression with varied media. Prereq: 313. May be repeated. Maximum 12 hours. Total of 12 hours required for undergraduate students in the Painting concentration.

415 Watercolor IV (6) Advanced painting with water-based media on paper stressing individual concepts and personal approach. Prereq: 315. May be repeated. Maximum 12 hours. Total of 12 hours required for undergraduate students in the Watercolor concentration.

419 Special Topics in Drawing and Painting (3) Student or instructor-initiated course offered at convenience of department to enhance and expand the painting, drawing, and watercolor curriculum. Prereq: Consent of instructor. May be repeated. Maximum 12 hours.

493 Independent Study (1-15) Prereq: Consent of instructor.

494 Individual Problems (3) Prereq: Consent of instructor. May be repeated. Maximum 12 hours.

495 Visiting Artist Seminar (2) Study and discussion of contemporary art issues conducted by different visiting artists each semester. (Does not apply toward art history requirement.) May be repeated. Maximum 8 hours.

ARTPRINTMAKING (132)

191 Introduction to Studio Art: Various Media (3) Individual sections for various artistic disciplines. For non-majors only. Courses may be repeated, medium may not be repeated. Maximum 12 hours.

262 Intaglio I (3) Metal plate intaglio printing in traditional and contemporary techniques of etching, softground, drypoint, aquatint, and color methods. Prereq: Art 101.

263 Lithography I (3) Stone and aluminum plate lithography applying traditional and contemporary techniques of crayon, tusche, transfer methods, state proofs and photolithography. Prereq: Art 101.

264 Screen Printing I (3) Screen printing as a fine art medium including development and application of various basic stencils in compositional printing. May be repeated. Maximum 6 hours. Prereq: Art 101.

269 Special Topics in Printmaking (3) Student or instructor-initiated course offered at convenience of department. Prereq: Art 101 and determined by department for individual topic. May be repeated. Maximum 12 hours.

291 Papermaking Workshop (3) Papermaking as a medium for two- and three-dimensional art. Includes sheet forming, imbedding, laminating, embossing, pulp dyeing, inlaying, casting, and other related techniques. Emphasis on development of a personal form.

360 Printmaking Portfolio Review (0) Review of prior work in printmaking. Successful completion required prior to registration for junior and senior courses. Prereq: Art History 172 and 173 with a grade of C or better. Satisfactory/No Credit grading only.

362 Intaglio II (4) Exploration of concepts and techniques in intaglio printing including work from zinc, photo-zinc, and steel plates. Prereq: 262 and 360 or consent of instructor. May be repeated. Maximum 8 hours.

363 Lithography II (4) Exploration of concepts and techniques in lithography from stones, aluminum plates and photo-plates. Prereq: 264 and 360, or consent of instructor. May be repeated. Maximum 8 hours.

364 Screen Printing II (4) Advanced work with basic screen printing techniques including photo screening. Emphasis upon image development and personal concept. Prereq: 264 and 360, or consent of instructor. May be repeated. Maximum 8 hours.

462 Intaglio III (3-6) Exploration of individual projects through advanced color printing methods and combinations with other print media. Prereq: 362, or consent of instructor. May be repeated. Maximum 12 hours.

463 Lithography III (3-6) Exploration of individual projects through advanced lithographic methods in combination with other print media. Prereq: 363, or consent of instructor. May be repeated. Maximum 12 hours.

464 Screen Printing III (3-6) Individual development of screen printing and techniques. Emphasis upon greater development of image and personal concept. Prereq: 364, or consent of instructor. May be repeated. Maximum 12 hours.

469 Special Topics in Printmaking (3-6) Student or instructor-initiated course offered at convenience of department. Prereq: Determined by department for individual topic. May be repeated. Maximum 12 hours.

493 Independent Study (1-15) Prereq: Consent of instructor.

494 Individual Problems (3) Prereq: Consent of instructor. May be repeated. Maximum 12 hours.

495 Visiting Artist Seminar (2) Study and discussion of contemporary art issues conducted by different visiting artists each semester. (Does not apply toward art history requirement.) May be repeated. Maximum 8 hours.

ARTSCULPTURE (143)

191 Introduction to Studio Art: Various Media (3) Individual sections for various artistic disciplines. For non-majors only. Courses may be repeated, medium may not be repeated. Maximum 12 hours.

240 Techniques and Tools (1) Introduction to the equipment in metal shop, wood shop, and foundry. Instruction includes shop safety, operation of tools, and handling of hazardous materials. All students must pass proficiency tests.

241 Beginning Sculpture (3) Introduction to the materials, concepts, techniques, processes, and history of sculpture. Materials include wood, plaster, steel and plastics. Prereq: Art 103.

242 Figurine the Body (3) Sculpture that involves the human figure, directly or indirectly. Prereq: Art 103, Art Sculpture 240, or consent of instructor. May be repeated. Maximum 8 hours.

243 Mold-Making and Casting (3) Examines possibilities and processes related to mold-making. A variety of casting materials will be explored including metals, wax, rubber, plaster, and ceramic shell. Prereq: Art 103, Art Sculpture 240, or consent of instructor. May be repeated. Maximum 8 hours.

245 Metal Fabrication (3) Introduction to steel as a material for the creation of sculpture. Development of welding techniques, design of cold connections, and engineering of structural components. Prereq: Art 103, Art Sculpture 240, or consent of instructor. May be repeated. Maximum 8 hours.

246 Mixed Media Sculpture (3) Includes installation art, performance, and conceptual art. Contemporary issues and materials related to sculpture are examined through research and studio projects. Prereq: Art 103, Art Sculpture 240, or consent of instructor. May be repeated. Maximum 12 hours.

340 Sculpture Portfolio Review (0) Review of prior work in sculpture and development of new work. Successful completion required prior to registration for junior and senior courses. Prereq: Art 101, 103; Art History 172, 173, 162, 183 (choose two); Sculpture 240, 241, 245, 246 and 340, or consent of instructor. May be repeated. Maximum 6 hours.

341 Intermediate Sculpture (3) Students begin defining and developing their visual vocabulary relative to contemporary sculptural issues. Emphasis on studio projects, research, and discussion. Prereq: Art 103, Art Sculpture 240, 241, 245, 246 and 340, or consent of instructor. May be repeated. Maximum 6 hours.

343 Metal Casting II (3) Further exploration of casting methods for bronze and aluminum. Prereq: 243 and 340 or consent of instructor.

345 Advanced Metal Fabrication (3) Advanced exploration of construction in steel and other metals through welding, design of cold connections, and engineering of structural components. Prereq: Art 103, Art Sculpture 240, 245 and 340, or consent of instructor.

346 Mixed Media Sculpture (3-6) Advanced investigation into the sculptural possibilities of installation art, performance, and multimedia. Contemporary issues are examined through research and studio projects. Prereq: Art 103, Art Sculpture 241, 246 and 340, or consent of instructor.

441 Advanced Sculpture (3-6) Individual development of sculptural problems and techniques. Students work independently while participating in group projects, critique, and discussion. Prereq: 6 hours of 300-level sculpture. May be repeated. Maximum 12 hours.

442 Senior Seminar (2) Investigation of professional practices and career opportunities in the field of sculpture. Includes portfolio development, preparation for exhibitions, and public commissions.

449 Special Topics in Sculpture (3) Student or instructor-initiated course offered at convenience of department. Prereq: Successful completion of any Portfolio Review (Art 300, or Art Ceramics 320, or Art Design/Graphic 330, or Art Drawing 312, or Art Media Arts 330, or Art Painting 314, or Art Painting 316, or Art Printmaking 360, or Art Sculpture 340). May be repeated. Maximum 12 hours.

493 Independent Study (1-15) Prereq: Consent of instructor.

494 Individual Problems (3) Prereq: Consent of instructor. May be repeated. Maximum 12 hours.

495 Visiting Artist Seminar (2) Study and discussion of contemporary art issues conducted by different visiting artists each semester. (Does not apply toward art history requirement.) May be repeated. Maximum 8 hours.

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200 Special Topics (2-4) Student- or instructor-initiated course offered at convenience of department. May be repeated.

210 Drawing (2-4) Beginning to intermediate. May be repeated.

220 Ceramics (2-4) Beginning to intermediate. May be repeated.

230 Photography (2-4) Beginning to intermediate. May be repeated.

240 Painting (2-4) Beginning to intermediate. May be repeated.

250 Metal Design (2-4) Beginning to intermediate. May be repeated.

260 Fibers (2-4) Beginning to intermediate. May be repeated.

270 Fabric (2-4) Beginning to intermediate. May be repeated.

280 Enameling (2-4) Beginning to intermediate. May be repeated.

290 Wood (2-4) Beginning to Intermediate. May be repeated.

400 Special Topics (2-4) Student or instructor initiated course offered at convenience of department. May be repeated.

410 Drawing (2-4) Intermediate to advanced. May be repeated.

420 Ceramics (2-4) Intermediate to advanced. May be repeated.

430 Photography (2-4) Intermediate to advanced. May be repeated.

440 Painting (2-4) Intermediate to advanced. May be repeated.
COURSES OF INSTRUCTION

450 Metal Design (2-4) Intermediate to advanced. May be repeated.
460 Fibers (2-4) Intermediate to advanced. May be repeated.
470 Fabric (2-4) Intermediate to advanced. May be repeated.
480 Enameling (2-4) Intermediate to advanced. May be repeated.
490 Wood (2-4) Intermediate to advanced. May be repeated.

ASIAN LANG UAGES (144)

131-132 Elementary Chinese I, II (5,5) Must be taken in sequence.
151-152 Elementary Japanese I, II (5,5) Must be taken in sequence.
199 Chinese and Japanese Language and World Business (2) Examines the importance of foreign trade at the local, state, and national levels. Interdisciplinary faculty from the Colleges of Business Administration and Arts and Sciences provide an overview of the value of language study and international cultural awareness in the program in Languages and World Business. See Director for further information.

231-232 Intermediate Chinese I, II (5,5) Prereq: 131-132 or equivalent or consent of instructor. Must be taken in sequence.
251-252 Intermediate Japanese I, II (5,5) Prereq: 151-152 or consent of instructor. Must be taken in sequence.
311-312 Chinese Literature in English Translation (3,3) 311-Classical literature. 312- Vernacular and modern literature. Writing-emphasis course.
313-314 Japanese Literature in English Translation (3,3) 313-Classical-traditional; masterpieces of poetry, fiction, and drama to 1868. 314-Modern: masterpieces of fiction since 1868. Writing-emphasis course.
331-332 Advanced Chinese I, II (4,4) Prereq: 231-232 or equivalent or consent of instructor. Must be taken in sequence.
351-352 Advanced Japanese I, II (4,4) Includes conversation, drill, and composition practice with native speaker as well as reading and translation. Prereq: 251-252. Must be taken in sequence.
431 Readings in Chinese Literature (3) Prereq: Mastery of intermediate-level of Chinese or consent of instructor. May be repeated. Maximum 9 hours.
451 Readings in Japanese Literature (3) Prereq: Mastery of intermediate-level of Japanese or consent of instructor. May be repeated. Maximum 9 hours.
490 Chinese and Japanese Internship (1-15) Career-related experiences in the United States or abroad with permission of the Language and World Business Director. For Language and World Business majors only. Satisfactory/No Credit grading only.
491 Chinese and Japanese Foreign Study (1-15)

ASIAN STUDIES (145)

101-102 Asian Civilization (3,3) Comparative study of development of religion, social institutions, and high culture in India, China, Japan, and the Islamic world. 101-India and the Islamic World. 102-China and Japan. Writing-emphasis course.
121-122 Elementary Modern Standard Arabic I, II (4,4) Taped language program. Must be taken in sequence Enrollment by permission of instructor.
141-142 Elementary Modern Hebrew I, II (4,4) Taped language program. Must be taken in sequence. Enrollment by permission of instructor.
161-162 Elementary Persian (4,4) Taped language program. Must be taken in sequence. Enrollment by permission of instructor.
221-222 Intermediate Modern Standard Arabic I, II (4,4) Taped language program. Must be taken in sequence. Enrollment by permission of instructor.
241-242 Intermediate Modern Hebrew I, II (4,4) Taped language program. Prereq: 141-142 or equivalent or consent of instructor. Must be taken in sequence.
261-262 Intermediate Persian (4,4) Taped language program. Prereq: 161-162 or equivalent or consent of instructor. Must be taken in sequence.
332 Classical Islam (3) (Same as Religious Studies 332).
333 Islam in the Modern World (3) (Same as Religious Studies 333).
471 Selected Topics in Asian Studies (3) Content varies. May be repeated. Maximum 9 hours.
491 Foreign Study (1-15)
492 Off-Campus Study (1-15)
493 Independent Study (1-15)

ASTR O NO MY (150)

151-152 Introductory Astronomy (4,4) Survey of the composition, structure, and dynamics of the universe which introduces the basic vocabulary of astronomy and scientific method. Components of the solar system including results from interplanetary exploration; hypotheses and theories of the origin and evolution of our solar system in light of current knowledge and scientific reasoning; stellar birth, evolution and death as a chain of events; characteristics of galaxies and the origin of the universe examined in light of modern astrophysics and particle physics. A minimum of mathematical analysis. Must be taken in sequence. 4 hours lecture-demonstration and star chart field work. Only one of the three sequences 151-152, 161-162, or 217-218 may be taken for credit.
161-162 Introductory Astronomy with Laboratory (4,4) Survey course, with accompanying laboratory, treating the composition, structure and dynamics of the universe and introducing the basic vocabulary of astronomy and principles of scientific method. Components of the solar system including results from planetary exploration spacecraft; hypotheses and theories of the origin and evolution of the solar system in light of current knowledge and scientific reasoning; stellar birth, evolution, and death as a chain of events; characteristics of galaxies and of the beginning of the universe in light of modern astrophysics and particle physics. Principles for interpretation of astronomical observations are reinforced in laboratory. Must be taken in sequence. 3 hours lecture, 2 hour lab. Only one of three sequences 151-152, 161-162 or 217-218 may be taken for credit.
217-218 Honors: Introductory Astronomy (4,4) Introduction to astronomy and astrophysics; historical perspectives in understanding the celestial universe, with emphasis on the laws of physics as they apply to the changing conceptions of the universe; structure of the solar system and celestial motions; evolution and properties of stars; galactic structure and models of the universe; observational technique and interpretation of underlying physical laws in accompanying lab. 3 hours lecture, 2 hours lab. Coreq: Mathematics 141 or 130 or equivalent. Credit given for only one sequence of lower division astronomy. This sequence satisfies the Arts and Sciences requirement for a natural science with laboratory.
411 Astrophysics (3) Development of analytical physical models of the galactic structure of the universe, stellar and interstellar matter, and planetary systems. Topical and interdisciplinary approach includes consideration of quasars, pulsars, black holes and current developments in the field. Acceptable for major credit in physics. Prereq: Physics 136 or 138 or 222 or 232 and consent of instructor.
490 Special Topics in Astronomy (1-3) Topics of current interest in Astronomy and Astrophysics. May be repeated for credit with consent of department. Maximum 9 hours.

AUDIOLOGY AND SPEECH PATHOLOGY (160)

300 Introduction to Communication Disorders (3) Nature, etiology, and incidence of speech, hearing and language disorders.
302 Audiences and Perception (3) Basic acoustics. Introduction to psychoacoustics and speech perception.
305 Phonetics (3) Basic phonetics including recognition and production of spoken English sounds with analysis of their formation; phonetic transcription of speech; phonetic aspects of dialect variation.
306 Anatomy and Physiology of Speech (3) Anatomy, physiology and embryological development of the speech production mechanism. Prereq: 305.
320 Speech and Language Development (3) Speech and language development in the normal child.
431 Stuttering (3) Nature, appraisal and treatment. Prereq: 300 or consent of instructor.
433 Observation of Clinical Practice (1) Prereq: 320 or consent of instructor.
434 Clinical Practice in Speech-Language Pathology II (1-4) Prereq: 433 and consent of instructor. Enrollment for fewer than 2 semester hours must have prior departmental approval. May be repeated. Maximum 4 hours.
435 Introduction to Speech Sound Disorders (3) Etiology, diagnosis, and treatment of articulatory and phonological disorders. Prereq: 300, 305 or consent of instructor.
445 Clinical Practice in Audiology (1-4) Prereq: 473 and 494. May be repeated. Maximum 6 hours.
455 Problems in Speech Pathology (1-3) Prereq: Consent of instructor.
473 Introduction to Audiology Assessment (3) Basic principles of clinical audiometry; pure tone, speech, masking and overview of special audiological tests. Prereq: 303.
475 Assessment of Speech and Language Disorders (3) Diagnostic procedures for children and adults with speech and language problems including observation and practice with diagnostic tests. Prereq: 300, consent of instructor and senior standing.
491 Foreign Study (1-15)
492 Off-Campus Study (1-15)
493 Independent Study (1-15)
494 Aural Habilitation/Rehabilitation of the Hearing Impaired (3) Introduction to psychosocial aspects, amplification components/characteristics, assistive devices, speech acoustics, speech perception, speechreading, parent-infant, preschool school years of children, communication impairments/handicaps/remediation of adults, effects of aging/ remediation on the elderly, and case studies. Prereq: 305 and 473, or equivalents or consent of instructor.
499 Senior Seminar in Communication Sciences and Disorders (3) Capstone Experience; an intensive, in-depth, hands-on emphasis course exploring the forces shaping the profession of communication disorders in the past, present and future. Prereq: Consent of instructor and senior standing.
data analysis, and peer evaluation. Prereq or Coreq: 401 or 410.

30 Modern Medicine and You (3) New biomedical advances in internal medicine, surgery, obstetrics and gynecology, infectious diseases, cancer treatment, genetic disorders, psychiatry, health promotion, and disease prevention. Taught by academic clinicians in their area of specialty. Class meets 2 hours a week. Each session will include: basic biological principles/processes; scientific advances and current status about new diagnostic and treatment procedures of the particular disease state. Prereq: Biology series for majors or non-majors. Satisfactory/No Credit grading only.

310 Physiological Chemistry (4) Biochemical principles underlying physiological events in animal. Metabolism of carbohydrates, lipids, proteins, and nucleic acids. Role of vitamins and minerals as coenzyme and prosthetic groups. Action of drugs and hormones. Prereq: Chemistry 100-110 or 120-130. Biology 130-40 or BCM 230. Not available for credit if credit has been received for BCM 401 or 410 or 420. Credit cannot be counted toward BCM concentration. F. (Same as Nutrition 310.)

320 Physiology of Reproduction and Lactation (3) (Same as Animal Science 320.)

330 Mechanisms of Development (3) A survey course on cellular and molecular basis of embryonic development; differentiation via transcription, RNA processing, and translation; sex determination in humans. Intended for Biology majors in BCM concentration, but also open to other Biology majors. Prereq: Biology 120-240 or consent of instructor.

331 Mechanisms of Development Laboratory (2) Coreq: 330. 2 labs.

401 - 402 Biochemistry-Molecular Biology I, II (4,4) A two-course sequence providing in-depth coverage of biochemistry and molecular biology, intended for Biology majors concentrating in BCM, but also open to Biology majors in other concentrations. First semester covers structure and chemical behavior of proteins, protein folding, enzyme behavior and function, reaction mechanisms, catabolism and energy transfer, synthetic metabolism including photosynthesis, and protein transport. Second semester covers structure of DNA and RNA, experimental methods of analyzing nucleic acids and proteins, mechanisms of proteins in RNA-DNA replication, repair and recombination, chromosome structure and function, regulation of gene expression, genome structure and genomics, and mechanisms of biological regulation. Prerequisites: Biochemistry 240, Chemistry 350-360-369.


405 - 406 Minicourse in BCM (2,2) Select advanced topics in biochemistry, cell biology, genetics, and molecular biology, or developmental biology concentrated in time and subject matter. Consult departmental listing for topics offered. Prereq: As announced. May be repeated. Maximum 4 hrs may apply toward BCM major.

409 Perspectives in Biochemistry and Cellular and Molecular Biology (3) Current issues in biochemistry, cell biology and molecular biology. Emphasis on current developments and their applications, societal and economic impacts and moral and ethical implications. An oral presentation and a referenced library-research essay are required. A capstone course. Writing-emphasis course.

410 Cellular and Comparative Biochemistry (4) Electrolyte behavior, chemistry and structural function of ions; enzyme structure and behavior; catabolism and energy capture; synthetic metabolism; nucleic acid function; protein synthesis, and biochemical genetics; regulation of biological processes. Prereq: Chemistry 350-360-369 and Biology 140-240. Not available for credit if credit has previously been received for BCM 401. Credit may not be applied toward BCM concentration.

411 Advanced Cellular Biology (3) Cellular structure and function at the molecular and supramolecular level. Topics include protein structure and function, membrane structure and function, signal transduction, aging and death, ion transport, and the cell cycle, cytoskeleton, and cell motility. Class meets 2 hours a week and includes 2 hours of laboratory. Prereq: 401 or 410.

415 Foundations in Neurobiology (3) Basic nerve cell physiology, nervous system organization, sensory and motor systems, neural basis of behavior, and nervous system development and plasticity. Prereq or coreq: Physics 221-222; Chemistry 120, 130; Biology 140.

416 Neurobiology Laboratory (2) Experiments designed to illustrate concepts of modern neurobiology using electrophysiological, historical, and behavioral neurobiological techniques. Prereq or coreq: 415.

419 Cellular and Comparative Biochemistry Laboratory (2) Experiments with enzymes, nucleic acids, and membrane and organelles. Chromatography, kinetics, hybridization, sequencing, and immunochromatographic methods. Prereq or coreq: 401 or 410.

420 Advanced Topics in BCM (3) Selected Topics of current research interest, e.g., allosteric theory and control of protein function, immunoochemistry, regulation of gene expression, bioenergetics, etc. Emphasis on original literature and the experimental basis of current knowledge. Historical background, societal impact, ethical and moral implications, and future development of technologies. Written reports required. Prereq: 410. Writing-emphasis course.

421 Cell and Tissue Structure and Function (4) Study of animal cells and tissues at light and electron micro scope levels. Prereq: Biology 140, 2 hrs and 2 labs.

429 Cell Biology Laboratory (3) A series of open-ended, discovery-based exercises will be developed to design and test new drugs using modern cell biology and computer technology. Experimental modules include techniques used in cell line technologies, e.g., cell culturing, fluorescent microscopy, receptor binding and signal transduction, apoptosis, cell cycle analysis, protein and steroid secretion, computer modeling, and state-of-the-art electron microscopy. Students will actively participate in experiment design, execution, data analysis, and peer evaluation. Prereq or Coreq: 401 or 410.


452 Independent Research in Biochemistry (1-6) Special experimental problems under direction of a staff member. Limited to undergraduates and by consent of instructor. May be repeated. 12 hours. Prereq or Coreq: 410, 419, or consent of instructor.

471-481 Biophysical Chemistry (3,3) Physicochemical principles with applications to biological systems. 471 Thermodynamics; chemical equilibrium; solution chemistry; transport; electrochemistry; kinetics; enzymatic catalyzed reactions. 481—Elementary quantum chemistry; interactions of light with biological molecules; optical and magnetic spectroscopy; light scattering; case studies of selected macromolecules. Prereq: Calculus, Organic Chemistry, General Biology or consent of instructor. (Same as Chemistry 471-481.)

480 Physiology of Exercise (3) (Same as Exercise Science 480.)

492 Off-Campus Study (1-6) No more than two credits of 492 will count toward the Biological Sciences: BCM major. Satisfactory/No Credit grading only.

493 Independent Study (1-3) Independent study under the direction of a faculty member. Satisfactory/No Credit grading only.

101-102 Humankind in the Biotic World (4,4) Introduction to the principles of biology from the perspective of the impacts of plants, animals, and microbes on human life, and the impact of humans on the biosphere, intended for students not majoring in the biological or pre-health sciences. 101 surveys life from the cell to topics in human health. Topics include: microorganisms and cells, energy flow in biological systems, genetics and information flow from generation to generation, reproduction, biotechnology and genetic engineering, sex and sexuality, human physiology, cancer, drugs—use and misuse. 102 focuses on the diversity of the Earth’s biota and the interdependence among components. Topics include: surveys of biodiversity from bacteria to higher plants and animals, genetics and evolutionary processes, population biology, ecology, ecosystems, environmental issues including world population growth, global climate change. Each course is 3 hours lecture and 1 hour discussion/ laboratory. Laboratories involve a mix of skills-oriented exercises and assignments focused on topics. Although not required, it is strongly recommended that 101-102 be taken in sequence.

130 Biodiversity (4) Unifying concepts and principles of biology, illustrated with diversity of life, intended for science majors. Properties of life, molecular basis, origin of life, cells, genetics, introduction to kingdoms, origins of multicellularity, multicellular plants and animals, ideas about evolution, man’s place in nature. Emphasis on common themes in living systems (e.g., metabolism, protein and nucleotide sequence similarities, morphology), phylogeny construction, fossils, and the major plant and animal groups. Writing and analysis of lab activities required. 3 hours lecture, 1 hour lab each week. Credit not available for students with credit for both 101 and 102.

140 Organization and Function of the Cell (4) Topics include: basic organic chemistry and biomolecules, cell structure—membranes, cell walls, and internal organelles; energetics—respiration and photosynthesis; cell division mitosis; and molecular biology. Labs will stress basic laboratory skills and procedures such as measuring pipetting and titrating, as well as introduction to modern methods for analysis of cell components such as electrophoresis and centrifugation. Prereq: 130; Chemistry 120; Coreq: Chemistry 130.

202-203 Inside the Biological Sciences (1,1) Presentations by faculty and other biology professionals -emphasizing applied biological research. Familiarizes students with diverse research and current applications of biology. Open to freshmen and sophomores. Satisfactory/No Credit grading only. May be repeated.

240 General Genetics (4) Classical and modern principles of heredity. Topics include meiosis and transmission genetics; molecular genetics and gene expression; population and evolutionary genetics. Laboratories will alternate with problem-solving sessions and will include both computer based simulations and hands-on experience with model genetic systems. Emphasis on development of analytical skills. Prereq: 130-140 or Botany 110-120; Chemistry 120-130.

250 General Ecology (4) Relations between organisms and their environment, including human environmental problems. Topics include populations, communities, and ecosystems. 3 hours lecture, 1 hour discussion, field problems or computer simulations. A working knowledge of college algebra is required. Prereq: 130-140 or Botany 110-120; Chemistry 120-130.

307-308 Honors Colloquy in Biological Research (1,1) Presentations by professional biologists emphasizing rewards of careers in different areas of biology. Not normally recognized speakers invited each term. Open to sophomores, juniors and seniors; required of Threshold Biology Scholars. Prereq: 8 hours of 200 or above, admission to an honors program or permission of the instructor. Satisfactory/No Credit grading only. May be repeated.

397 Honors Seminar on Research Skills (3) Technical and cognitive skills necessary for participation in biological research. Lecture/presentations and small team demonstrations and discussion. Required of (but not limited to) Threshold Biology Scholars. Prereq: 8 hours of 200 or above. Permission of instructor required.

398 Honors Practicum in Biological Research (3-5) Rotation through 3-5 modules of research training and elective experiences in participating laboratories. Required of (but not limited to) Threshold Biology Scholars. Prereq: 8 hours of 200 or above and 397. Permission of instructor required.
401 Senior Thesis (3-12) Required research experience of Threshold Biology Scholars. Students design research projects, complete research data acquisition, organize thesis documents, and prepare presentations. May be repeated. Maximum of 12 hours. Prereq: 394-395.

**BIO MEDICAL ENGINEERING**

See Engineering Biomedical.

**BIOSYSTEMS ENGINEERING (196)**

104 Design Apprenticeship (1) Exposure to design in biosystems engineering, through apprenticeship with senior design teams in Biosystems Engineering 402. Apprentices will maintain a journal detailing their activities in assisting the senior design engineers, and will make an oral presentation summarizing the design project with which they assisted. Grading will be based on journal submissions, contributions to the design team, and the final presentation. Prereq: Engineering Fundamentals 101. 2 hour lab.

201 Career Opportunities (1) Activities and opportunities in the fields of specialization; required training for each area; projected career activities. 1 hour.

221 Mass and Energy in Biosystems (3) Introduction to thermodynamic concepts for biological systems (energy, mass and energy balances, processes and cycles); psychrometrics and psychrometric processes; biological systems and the biosphere (bioenergetics, hydrologic cycle, global energy cycle). Prereq: Chemistry 120, Engineering Fundamentals 102. 2 hours and 1 lab.

321 Biothermodynamics, Heat and Mass Transfer (3) Application of thermodynamics to biological systems; heat transfer, with emphasis upon convection and conduction applications; introduction to diffusion mass transfer. Coreq: Mathematics 241. Prereq: 221. Nuclear Engineering 203. 2 hours and 1 lab.

401 Biosystems Engineering Design I (3) First course of a capstone design sequence. Review of fundamental engineering principles, time and project management, ethics, contemporary issues in biosystems engineering, portfolio review, and design proposal generation. Design proposals will include extensive documentation and preliminary analyses. Prereq: senior standing and at least three of 411, 421, 431, 441, 451, or consent of instructor.

402 Biosystems Engineering Design II (6) Culmination of capstone design sequence. Intensive design experience on project chosen and approved in Biosystems Engineering 401. Analysis, construction, testing, evaluation and reporting required. Technical lectures on statistics, engineering software, and technical issues relevant to the chosen design project. Weekly oral and written reports. Submission of design to external engineering design competition or display required. Prerequisite: 401. 2 hour lecture, 2 hour recitation (weekly project reports) and 4 hour lab.

411 Mechanical Systems Engineering (3) Fundamentals of power delivery systems and simple mechanisms; selection and design of mechanical, hydraulic, and tractive power transmission systems. Emphasis on off-road vehicles and bioprocessing systems. Prereq: Mechanical Engineering 231 and 321; Coreq: 321. 2 hours and 1 lab.

421 Natural Resource Engineering (3) Introduction to the hydrologic cycle: how water moves through and interacts with the environment through such processes as erosion and contaminant transport. Examining those impacts through estimation and measurement, and controlling the impacts through engineering design. Specific designs will include waterways, erosion and sediment control structures, waste management systems, irrigation systems, and hydrologic monitoring systems. Prereq: Environmental and Soil Sciences 210, Civil and Environmental Engineering 390 or Aerospace Engineering 341. Coreq: 321. 2 hours and 1 lab.

431 Bioprocessing Engineering (3) Application of basic engineering principles to processing and handling of biological materials: physical, chemical, biological properties; materials handling; material conversion operations; drying; heat processing; and handling and disposal methods. Prereq: Mathematics 123 or equivalent. 2 hours and 1 lab.

441 Life Systems Engineering (3) Design of controlled environments to optimize conditions for organism growth and development; growth equations and population dynamics; plant growth systems; microbial growth systems; animal growth systems; biotechnological applications. Prereq: Mathematics 231; Coreq: 321. 2 hours and 1 lab.

444 Practicum (3) Applications of engineering theory and design in selecting, sizing, and fabricating engineering materials, and in developing processes and systems typically used in biosystems engineering. Must be taken in same semester as 401. 1 hour and 2 labs.

451 Electronic Systems (4) Basic electronics with biological applications. Analog and digital electronics; sensing and controlling physical and environmental parameters; sensor selection and interfacing; signal conditioning; process control. Includes laboratory experiments and design projects. Design content, 1 hour. Prereq: Electrical Engineering 301. 3 hours and 1 lab.

470 Special Problems in Biosystems Engineering (1-3) Selection, analysis solution and report of problem. May be repeated.

480 Selected Topics in Biosystems Engineering (1-3) Current trends and problems in agricultural engineering. May be repeated.

**BIOSYSTEMS ENGINEERING TECHNOLOGY (194)**

202 Materials and Fabrication (3) Properties of materials including wood, metals, concrete, plastics and lubricants; drafting and plan reading; fabrication techniques and processes involving hand tools, power equipment, and arc and gas welding. 1 hour and 2 labs.

212 Surveying (3) Measurement of distances, angles, and areas; differential and profile leveling; topographic surveying and mapping; area computation. Prereq: Mathematics 119 or consent of instructor. 1 hour and 1-3 lab.

326 GIS/GPS Applications in Agriculture and Environmental Science (3) Introduction to the application of Geographic Information Systems (GIS) and Global Positioning Systems (GPS) in agriculture and in environmental science. Topics covered will include GIS software and concepts, GPS receivers, data acquisition, and spatial analysis of data to solve problems. Case studies in agricultural demographics, precision agriculture, pasture management, water quality, watershed management, and wildlife. Emphasis on providing hands-on experience with these emerging technologies. Prereq. Agriculture and Natural Resources 290 or equivalent.

414 CAD Applications to Biosystems Engineering Technology (3) Computer Aided Drafting (CAD) applications in agriculture and environmental science. Essentials of CAD software to create drawings of components, systems, flow charts, and process diagrams. Applications in mechanical, structural, and biosystems. 2D applications with limited exposure to 3D applications. Computer intensive course. Hands-on experience. Prereq. Computer proficiency and admission to graduate program. (Students cannot receive credit for both 414 and 514.) Two 2-hour labs.

422 Food and Process Engineering Technology (3) Application of basic engineering principles to agricultural and food processes. Fluid handling, drying, evaporation, thermal processing, heating and cooling, refrigeration systems, and materials handling. Prereq: Physics 101 or 221. 2 hours and 1 lab.

432 Agricultural Machinery and Tractors (3) Functions, selection, matching, and management of agricultural machinery systems. Tractor power ratings, engine and transmission systems, hydraulic systems, hitching, and ballasting. Field and material handling; machinery safety considerations, operator ergonomics. Prereq: Mathematics 123 or consent of instructor. 2 hours and 1 lab.

434 Production Monitoring and Automation (3) Precision technologies for monitoring and control of agricultural systems. Applications include: yield monitoring; variable rate fertilizer applications; bioprocessing systems for plants, sprayers, soil-applied nutrients, water management, crop health, and pest pressure; electronic information transfer; and GPS-based vehicle guidance. Prereq: 326. Coreq: 432. 2 hours and 1 lab.

442 Agricultural Waste Management and Pollution Control (3) Waste renovation fundamentals; characteristics of animal manure, techniques for collecting, transporting, and utilizing livestock waste. Prereq: Mathematics 123 or 125 or equivalent. 2 hours and 1 lab.

452 Small Internal Combustion Engines (3) Theory, concepts and mechanics of small internal combustion engines; theoretical cycles, selection, operation, adjustment, troubleshooting and repair of small hand-held engines. Prereq: Mathematics 123 or consent of instructor. 2 hours and 1 lab.

462 Agricultural Chemical Application Technology (3) Equipment for application of liquid, solid, and gaseous agricultural chemicals; system components; operational characteristics; calibration; selection and management; safety considerations; materials handling and disposal methods. Prereq. Mathematics 123 or consent of instructor. 2 hours and 1 lab.

474 Environmental Instrumentation and Monitoring (3) Equipment and techniques commonly used to measure all aspects of hydrologic cycle: precipitation, runoff, streamflow, subsurface water movement. Sampling of all flows for contaminants. Design of monitoring systems. Analysis of data. Prereq. Environmental and Soil Sciences 324, Statistics 201, Mathematics 152, or consent of instructor. (Students cannot receive credit for both 474 and 574.) 2 hours and 1 lab.

**BOTANY (198)**

110-120 General Botany (4,4) 110 - Introduction to taxonomy through tree identification; basic organization and function of cells; respiration; photosynthesis; genetics (including meiosis, mitosis, Mendelian inheritance); survey of plant kingdom (bacteria, algae, fungi, mosses, ferns, conifers, and flowering plants). 120-Plant growth, anatomy, growth regulation; uptake and transport; origin of life and mechanism of evolution; ecology, importance to humans and environmental concerns. Students receiving credit for both 110-120 may not receive credit for either Biology 130-140 or Biology 101-102.

305 Socio-Economic Impact of Plants (3) Significance of plants in origin and development of human cultures, evolution of cultivated plants, and role of plants in present civilization. Field or research trips.

306 Genetics and Society (3) Introduction to genetics, anthropology and evolution with emphasis on their implications for human society. (Same as Anthropology 306.)

309 Biology of Human Affairs (3) Basic biological principles involved in deterioration and preservation of an environment in which humans and their cultures may survive.

310 Plant Morphology (4) Morphology, development, natural history, and evolution of non-vascular plants (monera, algae, fungi, and bryophytes) and vascular plants (ferns, fern allies, gymnosperms, and flowering plants). Prereq: 110-120 or Biology 130-140 or equivalent.

313 Introductory Plant Pathology (3) Same as Entomology and Plant Pathology 313.

321 Introductory Plant Physiology (4) Organismal physiology of plants; water relations, mineral nutrition, morphogenesis, elements of metabolic processes, effects of age, light, natural rhythms, temperature, and other environmental factors. Lecture and lab. Prereq. One course in general chemistry and one year biological science.

330 Field Botany (3) Principles of taxonomy, basic ecological concepts and the identification, recognition, collection and preservation of local, native and naturalized plants. Prereq. 8 hours in biological sciences.
371 Undergraduate Seminar (1) Principles and practice of preparing and delivering a seminar presentation, usually focused on a current topic in plant biology. Junior or senior standing recommended. May be repeated. Maximum 2 hours.

400 Tutorial in Botany (1-2) Individual, independent study under guidance of selected staff. By application only. May be repeated with consent of department. Maximum 4 hours.

401 Field Studies in Botany: (Specific Topic to be announced) (1-3) Field experience and taxonomic study in special topics. Selected topics will vary and may include Bryology, Lichenology, Peridinology, Agrostology, Mycology, Phyiology, Aquatic Vascular plants, Syntantherology, Woody Plants, and Botanical Photography. May be repeated, but no specific topic may be repeated for credit. Maximum 9 hours.

404 Plant Molecular Biology (4) Instructions to current research in plant molecular biology and to commonly used techniques and procedures. Lectures include genome structure, gene expression and regulation, transformation, transposable elements, plant development, isolation of DNA and RNA, molecular hybridization, isolation and preparation of plasmids, PCR amplification of specific sequences, DNA sequencing and transformation. Prereq: Biology 140 and 240 with grade of A or B and consent of instructor.

412 Plant Anatomy (3) Cells, tissues and organs; their development in vegetative and reproductive structures of vascular plants—emphasis on seed plants. Prereq: 110-120 or Biology 130-140 or equivalent.

419 Science as Method (3) (Same as Ecology and Evolutionary Biology 419 and Philosophy 419.)

431 Plant Ecology (3) Interactions between individuals, species, communities and their environments. Circulation of energy and matter in ecosystems. Weekly field trips or laboratory periods, and at least two weekend field trips. Prereq: 330 or equivalent. Su (Same as Ecology and Evolutionary Biology 431).

441-442 Undergraduate Research Participation (1-2,1-2) Experience in active research projects under supervision of staff members. Prereq: Junior or senior standing, minimum grade of 3.0 in Department. May be repeated. Maximum 8 hours.

451 Plant Tissue Culture (3) Methods for the culture of cells, tissues, and organs including media preparation and maintenance of cultures. Lecture and lab. Prereq: 110-120 or Biology 130-140 or equivalent and Chemistry 120-130 or equivalent. Recommended: 310, 321, 412; Microbiology 310 or 319; Ornamental Horticulture and Landscape Design 330.

471 Senior Seminar (3) A Capstone course conducted in seminar format dealing with topics of current interest in plant biology. Written reports and oral presentations are required. Prereq: Senior standing.

499 Evolutionary Ecology (3) Basic concepts in evolutionary and ecological genetics. Biogeography, climate, population genetics, evolution and natural selection, population growth, speciation, competition, niche, experimental ecology, predation, phylogenetics in ecology, biodiversity and conservation. Prereq: General Biology and General Ecology. Students may not receive credit for both 499 and 599. (Same as Ecology and Evolutionary Biology 499.)

BUSINESS ADMINISTRATION (205)

100 Approaches to the College of Business Administration (1) Integration into the College of Business Administration with emphasis on academic advising, major exploration, career planning, University resources and services, and reinforcement of academic survival skills such as time management and study skills. Satisfactory/ No Credit grading only. Prereq: consent of instructor.

101 Basic Business Applications (1) An online course with GTA consultation in which students learn operating systems basics, Lotus Notes GroupWare, and Microsoft Word, Excel, and PowerPoint. Exit testing is in the form of online performance tests in the applications on scheduled examination periods. Not available for credit if Management 203 or equivalent has been completed. Satisfactory/No Credit grading only.


320 Business Career Placement (1) Exploration of career opportunities in business. Process of making the career decision, preparing for and conducting a job campaign. Using the Placement Office. Satisfactory/No Credit grading only. Prereq: Satisfactory progression to upper-division level in Business or Liberal Arts Business minor.

331 CBM I: Supply Chain Management (2) Coordinating the end-to-end relationships between supply chain members, from inputs to delivery of product/services. Understanding impact of supply chain and supply information flows across the supply chain. Emphasis on integrating activities through improved processes and relationships to achieve and maintain competitive advantage. Prereq: Progression as a business major in the College of Business Administration and junior standing. Coreq: 332.

332 CBM II: Demand Management (2) Analysis of current and future markets opportunities. Translation of identified opportunities into strategies to select, acquire, and retain customers that are consistent with overall organizational objectives. Includes design, execution, and evaluation of strategies from the perspective of an organization within a channel of distribution context. Prereq: Progression as a business major in the College of Business Administration and junior standing. Coreq: 331.

341 CBM III: Lean Operations (2) Design of the product delivery system in manufacturing and service operations. The dynamics of the supply chain. Managing flows in manufacturing and service processes. Specific techniques for designing process design, such as pull replenishment, cellular layout, standard work, and mixed model sequencing. Prereq: Progression as a business major in the College of Business Administration and junior standing. Coreq: 342.

342 CBM II: Information Management (2) Emphasis on the concepts, structure, and components (input, processes, output, feedback and control) of information systems, and database design and management. Includes the role, function and integration of information systems and technology into business activities. Prereq: Progression as a business major in the College of Business Administration and junior standing. Coreq: BA 341.

351 CBM III: Business Management: The Marketplace (2) Integrative experiential learning experience to facilitate student learning of the interrelationships between the perspectives of supply chain management, demand management, operations management, and service management. Prereq: BA 331-332, BA 341-342. Must be admitted to a business major in the College of Business Administration and be of junior standing. Coreq: 352.

352 CBM III: Organizational Behavior (1) Behavioral processes in organizations; motivation, leadership, decision making, communication; behavioral consequences; group behavior, informal organizations, organizational structure, conflict, politics, change and development. Prereq: 331-332, 341-342. Must be admitted to a business major in the College of Business Administration and be of junior standing. Coreq: 351.

361 The Firm in a Global Context (3) Domestic and international factors that impact the decision-making process of the firm: domestic and international macroeconomics, regulation, trade policy, technological change, institutional and cultural systems. Emphasis on relationship between theoretical models and actual problems encountered in the conduct of business. Prereq: 201.


400 Special Topics (1-9) Topics of current interest in business. Topics announced prior to offering. May be repeated for additional credit provided topic is different. Maximum 9 hours. Prereq: consent of instructor.

467 Honors: Corporate Executive in Residence Seminar (3) Interaction with top corporate executives from a wide spectrum of business disciplines. Domestic and international strategic planning as it is applied in major U.S. Corporations. Executive presentations and small group discussion on goods and services in consumer and industrial settings. Prereq: Senior standing, 332 and 341, Finance 301, and consent of instructor.

491 Foreign Study (1-15) Prereq: Consent of instructor.

492 Off-Campus Study (1-15) Satisfactory/No Credit grading only. Prereq: Consent of instructor.

493 Independent Study (1-15) Prereq: Consent of instructor.

495 Seminar in International Business Policy (3) Capstone course for students in the Language and World Business Program designed to integrate concepts covered in other business courses. For students with major concentrations in International Business only.

BUSINESS LAW (216)

301 Legal Environment of Business (3) Survey of legal and ethical topics affecting business. Coverage includes legal and business ethics; dispute resolution mechanisms; and substantive and procedural law of regulation, torts, contracts, property, intellectual property, business associations, and employer/employee relations. Prereq: Junior standing. (Same as Legal Studies 301.)

401 Law of Business Organizations and Commercial Transactions (3) Introduction to legal implications of basic business transactions including contracts, property, negotiable instruments, secured transactions, bankruptcy, suretyship, insurance, and legal liability. Fundamentals of business law required for professional examination preparation (e.g. CPA Exam). Major writing requirement. Prereq: 301.

CHEMICAL ENGINEERING

See Engineering Chemical.

CHEMISTRY (235)

100 Principles of Chemistry (4) Bonding and molecular structure, gas laws, liquid and solid state, solutions, collidoids, acids and bases, oxidation and reduction, kinetics and equilibria. 3 hours and 1 lab.

110 Introduction to Organic and Biochemistry (4) Organic chemistry: alkanes, unsaturated and aromatic hydrocarbons, structures and reactions of various organic functional groups. Biochemistry: amino acids and proteins, carbohydrates, lipids, nucleic acids. 3 hours and 1 lab. Prereq: 100 or 130 or 138.

120-130 General Chemistry (4,4) A general course in theoretical and descriptive chemistry. 120 —Modern atomic theory, chemical bonding, stoichiometry, quantitative treatment of gas laws, quantitative aspects of solution chemistry, kinetics. 130—Chemical equilibria, thermochemistry, descriptive chemistry of nonmetallic and metallic elements, Electrochemistry, introduction to organic and biochemistry. Prereq for 130: 120 or 128. 3 hours and 1 lab.

128-138 Honors: General Chemistry (4,4) 3 hours and 1 lab.

150 Chemistry and Society (3) Food and agricultural chemistry; chemistry of life; chemistry in medicine; air and water pollution; energy and fuels. 3 hours lecture. Not a prerequisite for any other chemistry courses.

160 Chemistry and the Home (3) Chemistry and the consumer; household products; chemistry in the kitchen and around the home. 3 hours lecture. Not a prerequisite for any other chemistry course.
200 Introduction to Chemical Research (1) Participation in an active research program in analytical, inorganic, organic, physical, or polymer chemistry. Students work with researchers to acquire expertise in planning experiments, interpreting results, and formulating hypotheses. Credits may not be applied toward a major or minor in chemistry. Not a substitute for prerequisite for 400. Prereq or Coreq: 200 or higher level course in chemistry and consent of instructor. May be repeated. Maximum 4 hours.

230 Inorganic Chemistry (3) Periodicity, valence, bonding, and the descriptive chemistry of the elements; coordination compounds; nuclear chemistry; transition elements, inner transition elements. 2 hours and 1 lab. Prereq: 130 or 139.

240 Chemical Programming (2) Use of the computer in solving problems encountered in chemistry. Required of and limited to chemistry majors. Prereq: 130 or 138. 1 hour and 1 lab.

301 Industry/Laboratory Internship (3) Supervised by industry/laboratory technical staff at an approved facility. Consists of a full-time “hands-on” individual assignment for entire semester as member of a theoretical or experimental team. Credits may not be applied toward a major or minor in chemistry. May not be repeated. Prereq: 130 or 138 and consent of department head. Satisfactory/No Credit grading only.

310 Analytical Chemistry (3) Principles and practices of quantitative measurements in chemical systems. Acid-base, complexometric, and redox equilibria; applications of titrimetric analysis; potentiometry; elementary spectrophotometry; chemical separations including chromatography, ion exchange, and solvent extraction. Prereq: 130 or 138.

319 Analytical Chemistry Laboratory (1) Experiments on topics covered in 310. Coreq: 310.

320 Advanced Analytical Chemistry (3) Modern electroanalytical methods; mass spectrometry; optical spectroscopic techniques; magnetic resonance methods; advanced chromatographic theory. Prereq: 310.


350-360 Organic Chemistry (3,3) Compounds of carbon and their reactions. Reaction mechanisms; synthetic organic chemistry; and other physical properties. Must be taken in sequence. Prereq: 130 or 138; Coreq for 360: 369.

369 Organic Chemistry Laboratory (2) Experiments on topics discussed in 350-60. Coreq. 360. 1 hour lecture and 4-hour lab.

400 Research in Chemistry (3) Open to senior majors with consent of department head. Written reports are required. Advanced students work with faculty on projects requiring knowledge and skills acquired in chemistry curriculum. May be followed by either 400 or 408 (but not both); maximum of 6 hours of Research in Chemistry.

401 Advanced Industry/Laboratory Internship (3) Supervised by industry/laboratory technical staff at an approved facility and by a chemistry faculty member serving as liaison between the laboratory and the university. Consists of a full-time “hands-on” individual assignment for entire semester as member of a theoretical or experimental team. Final comprehensive written report required. May not be repeated. Prereq: 230 or higher numbered course in chemistry and consent of department head.

405 Topics in the Development of Chemistry (3) Historical development of topics such as the atomic theory; chemical industry; interrelationship of population, energy, and food. Subject matter may vary from one offering to another. Assignments include readings from older original literature (Dalton, Faraday, Kekule) and from current journals and monographs. Includes the use and misuse of evidence, the impact of chemistry on society, how scientists reach conclusions, and the nature of scientific controversy. Written reports will be required. Coreq: Senior standing in chemistry. Writing-emphasis course.

406 Senior Seminar (1) Discussions by faculty and students of current research and topics from recent literature. Oral and written reports required. All chemistry majors are encouraged to enroll. Coreq: Senior standing in chemistry. May be repeated. Maximum 2 hours.

408 Honors Research in Chemistry (3) Advanced students work with faculty on research projects requiring knowledge and skills acquired in chemistry curriculum. As Honors Thesiss is written and is defended orally before a faculty committee. Prereq: 400.

420 Selected Topics in Chemistry (1-3) Topics of current significance in Chemistry. May be repeated. Maximum 6 hrs. Only three credits may be applied to a major or minor in Chemistry. Prereq: consent of instructor.

430 Advanced Inorganic Chemistry (3) Atomic and molecular structure, bonding theories, descriptive chemistry of the elements, kinetics and mechanism of inorganic reactions, applications of modern techniques for characterization, coordination and organometallic chemistry. Prereq: 230.

439 Advanced Inorganic Chemistry Laboratory (1) Modern experimental techniques in inorganic chemistry, including synthesis, analysis, and handling of air-sensitive materials. Coreq: 430. Open to chemistry students only with consent of instructor.


471-481 Biophysical Chemistry (3,3) (Same as Biochemistry and Cellular and Molecular Biology 471-481.)

473-483 Physical Chemistry (3,3) Students may not receive credit for both 471 and 473 nor for both 481 and 483. 473—Properties of gases; first, second and third laws of thermodynamics; chemical equilibria; simple phase equilibria; properties of solutions. 483—Introduction to statistical thermodynamics; kinetics of chemical reactions; introduction to quantum mechanics and applications to electronic structure of atoms and molecules; molecular spectroscopy. Prereq: 130 or 138, 136 or 138 or 222 or 231, and Mathematics 241 or 247.

479-489 Physical Chemistry Laboratory (2,2) Experiments on topics discussed in 471-481 or 473-483. Prereq or Coreq: Corresponding courses 471 or 473 or 479 and 481 or 483 or 489. 1 lab.

490 Introductory Polymer Chemistry (3) Fundamental principles stressing the role of chemistry in the interdisciplinary field of polymer science. Relation of molecular structure to bulk properties of polymers. Prereq: 360. Prereq or coreq: 471 or 473.

CHILD AND FAMILY STUDIES (245)

102 Microcomputer Applications (3) (Same as RCS 102; HRA 102; Nutrition 102).

110 Introduction to Early Childhood Education (3) History, philosophy, current trends, issues, programs and program models. Includes observation.

205 Introduction to Family Life Programs (2) Community and school-based programs that focus on enhancing individual and family life. Includes observational experience. Satisfactory/No Credit grading only.

210 Human Development (3) Conception through adulthood in various social/ecological contexts; interpersonal relationships among various aspects of development: physical, cognitive, emotional, social; normative, nonnormative development. Includes observation.

211 Development in Infancy and Early Childhood (3) Development from conception through early childhood; interpersonal relationships among cognitive, emotional, social, physical aspects of ontogeny; normative, nonnormative development. Includes observation.

213 Development in Middle Childhood and Adolescence (3) Development during middle childhood and adolescence; interpersonal relationships among cognitive, emotional, social, physical aspects of ontogeny; normative and nonnormative development. Includes observation.

220 Marriage and Family: Roles and Relationships (3) Emerging, declining roles, changing relationships among family members across life cycle from various theoretical approaches; impact of gender roles on marital relationships, marital quality, power, decision-making, communications, conflict management, combining work-family roles. (Same as Women’s Studies 230.)

240 Human Sexuality (3) Sexuality through cultural, social, familial, and psychological perspectives.

312 Families in Middle and Later Adulthood (3) Adult life in society from youth through elderly; adjustment to internal, environmental changes through adulthood; interpersonal relationships among various aspects of development: physical, cognitive, emotional, social. Includes observation.

320 Parenting (3) Factors in contemporary American families impacting on parent-child relations across the life cycle. Review of strategies for strengthening parenting skills. Prereq: 220 or consent of instructor.

345 Family Resource Management (3) Theory and application of managerial functioning in family settings; analysis of goals, resource use, information systems, constraints within families. Observation and analysis of diverse family practices. Prereq: 220 or consent of instructor.

350 Early Childhood Education I: Environments for Children (4) Classroom management, behavior guidance, organization of day care environments, communication, interpersonal skills, interaction with children, child stress reduction and management in classroom. Laboratory participation included. Prereq: 110 and 211, admission to the major or consent of instructor.

351 Early Childhood Education II: Curricula and Program Development for Young Children (4) Planning effective early learning programs for young children relating knowledge of children’s growth and development to appropriate experiences in art, music, literature, media, physical knowledge, and science. Coreq: Planning, implementing, evaluating, and documenting activities. Laboratory participation included. Prereq: 350 and admission to the Child Development major or admission to the Early Childhood Education licensure program.

352 Diversity in Family-School-Community Relations (3) Techniques for developing community relationships including advocating for children and families from diverse cultural, socioeconomic, and other perspectives.

353 Reading, Language, and Literacy (3) Theory and methods for creating learning environments for the development of language, emergent literacy, and reading and writing skills from infancy through eight years. Prereq: 350 and admission to Early Childhood Education licensure program or consent of instructor.

360 Family Stress (3) Family’s response to stressful circumstances; skills for intervention into family systems; violence, abuse, divorce, illness, death. Prereq: 220 or consent of instructor.

405 Development and Teaching of Interpersonal Skills (3) Development of basic interpersonal skills needed to work with families and other professionals. Skills include self-disclosure, self-awareness, relationship building, and negotiation. Process of teaching interpersonal skills and group facilitation in community setting. Prereq: Family Studies majors only.

406 Family Diversity (3) Cultural, socioeconomic, ethnic variations; emerging needs and programs. Prereq: 220, Junior standing or consent of instructor. (Same as African-American Studies 420.)


430 Family Communication (3) Dynamics of interactions within family systems, marriage, and parent-child relationships. Study of verbal and nonverbal communication processes, patterns and problems. Prereq: 220 or Speech 320 or consent of instructor. (Same as Speech Communication 430.)

431 Family Life and Parent Education (3) Emphasis on skills required to develop family life education programs implemented in community settings. Overview of current approaches to the process of parenting and parent education programs. Prereq: Family Studies majors only.
450 Assessment in Early Childhood Programs (3) Methods and principles of assessment of children, birth through 8 years of age. Includes participation. Prereq: 350 and admission to the major or Chemical Engineering licensure program. Prereq or Coreq: 351.

451 Early Childhood Education III: Including Exceptional Children (3) Individualized curriculum planning based on knowledge of normative/nonnormative development, assessment, and effective teaching strategies for facilitating development. Includes participation. Prereq: 350 and admission to the Child Development major or admission to the Early Childhood Education licensure program.

455 Children and Stress (3) Theory and methods for understanding young children’s life stresses, examining children’s coping strategies, and designing appropriate intervention techniques and learning environments. Prereq: Admission to the Child Development major or the Early Childhood Education licensure program or by consent of instructor.

460 Directed Study in Child and Family Studies (1-3) Individual learning experience arranged for student under supervision of faculty. May be repeated with different topics. Maximum 6 hours. Prereq: 9 hours in Child and Family Studies and consent of instructor.

470 Student Teaching (6-12) Responsibility for planning and guiding groups of infants, toddler, or preschoolers under supervision of classroom teacher and coordinator. Includes weekly seminar. Prereq: 350 and 351 and admission to the Child Development major or admission to the Early Childhood Education licensure program and completion of all progression requirements. Satisfactory/No Credit grading only. F and Sp student teaching begins on first day of registration and ends on last day of final examination period (student teaching follows the CDE calendar and does not include Fall or Spring break). Summer student teaching begins the day following Spring commencement and ends on the day before Summer commencement. Priority for summer students teaching is given to students who have completed all program requirements, except student teaching, prior to the Summer session.

471 Practicum in Child Development (3-12) Supervised experiences working with children and families in early childhood settings. Prereq: Admission to the Child Development major or the Early Childhood Education licensure program and consent of the instructor. May be repeated. Maximum 12 hours. Satisfactory/No Credit grading only.

480 Internship in Family Studies (9) Supervised experiences in community-based family life programs. Coreq. or Prereq: Completion of Family Studies core, completion of the Instructional Pod and Family and Community Service Pod, including 405 and Human Services 380. Satisfactory/No Credit grading only.

481 Research in Child and Family Studies (3-6) Supervised research experiences. Prereq: 9 hours in Child and Family Studies, cumulative GPA of 3.0 or above, Junior standing, or consent of the instructor. May be repeated. Maximum 12 hours.

485 Special Topics in Child and Family Studies (1-9) Personal or professional interest in human development or family studies. Prereq: 9 hours in Child and Family Studies, Junior or Senior standing, or consent of instructor. May be repeated. Maximum 9 hours.

497 Honors: Child and Family Studies (3-6) Issues or topics affecting children and/or families, designed to meet particular interests of the student. Prereq: 9 hours in Child and Family Studies and consent of instructor. May be repeated. Maximum 6 hours.

CHIN ESE (249)

131-132 Elementary Chinese I,II (5,5) (Same as Asian Languages 131-132.)

231-232 Intermediate Chinese I,II (5,5) (Same as Asian Languages 231-232.)

311-312 Chinese Literature in English Translation (3,3) (Same as Asian Languages 311-312.)

331-332 Advanced Chinese I,II (4,4) (Same as Asian Languages 331-332.)

431 Readings in Chinese Literature (3) (Same as Asian Languages 431.)

CIN EM A STUDIES (251)

235 Introduction to Cinematography as Art (3) (Same as Art Media Arts 235.)

236 Introduction to Video Art (3) (Same as Art Media Arts 236.)

281 Introduction to Film Studies (3) (Same as English 281.)

312 Popular Culture and American Politics (3) (Same as Political Science 312.)

323 German Film (3) (Same as German 323.)

325 Russian Film (3) (Same as Russian 325.)

334 Film and American Culture (3) (Same as English 334 and American Studies 334.)

400 Special Topics (3) May be repeated. Maximum 6 hours.

420 French Cinema (3) (Same as French 420.)

421 Topics in Italian Literature and Cinema (3) (Same as Italian 421.)

433 Modern Art and Film (3) (Same as Art Media Arts 433.)

434 Hispanic Culture Through Film (3) (Same as Spanish 434.)

455 Cinematography as Art (3) (Same as Art Media Arts 455.)

463 Video as Art (3) (Same as Art Media Arts 463.)

465 Latin American Film and Culture (3) (Same as Latin-American Studies 463 and Spanish 465.)

469 Sexuality and Cinema (3) (Same as Women’s Studies 469.)

489 Special Topics in Film (3) (Same as English 489.)

491 Foreign Study (1-15)

492 Off-Campus Study (1-15)

493 Independent Study (1-15)

CIVIL ENGI NEERING

See Engineering Civil.

CLASSICS (257)

201 Introduction to Classical Civilization (3) Introductory survey of civilization of ancient Greece and Rome. Includes aspects of history, literature, art and archaeology, philosophy and religion. Writing-emphasis course.

221 Early Greek Mythology (3) Archaic Greek religion through comprehensive study of Greek myths with emphasis on how they reflect the early Greek vision of the universe and humanity’s place in it. Origins and development of Greek myths and the rise of organized religion, from Bronze Age to about 450 B.C. Readings include Hesiod and Aeschylus. Writing-emphasis course.

222 Classical Greek and Roman Mythology (3) Use of myth in literature, history, religion and philosophy of Greece and Rome from about 450 B.C. to about 350 A.D. Two foci are the latter half of the fifth century B.C. and the last quarter of the first century B.C. Includes oriental intrusions into Greece and Rome, including early Christianity. Readings include Sophocles, Euripides, Roman poetry, and modern scholarship. Writing-emphasis course.

232 Archaeology and Art of Ancient Greece (3) Survey of Greek archaeology from prehistoric times to the Roman period (ca. 3000-100 B.C.). For prehistoric times emphasis on architecture and artifacts used to recreate the culture of the Minoan and Mycenaean civilizations and that of the following Dark Age. For Archaic, Classical, and Hellenistic periods emphasis on development of architecture, sculpture, and vase painting. Includes minor arts and the relationship between archaeology and art. Writing-emphasis course.

233 Archaeology and Art of Etruria and Rome (3) Survey of the archaeology of the Italian peninsula and the Roman World from prehistoric times to the fall of the Roman Empire (1000 B.C.-500 A.D.) Reconstruction of the Etruscan culture from tombs, paintings, and artifacts, development of Roman architecture, and urban planning in Rome and the provinces. Writing-emphasis course.

253 Greek and Roman Literature in English Translation (3) Major literature of ancient Greece and Rome from Homer to Tacitus. Writing-emphasis course.

273 Medical and Scientific Terminology (3) Greek and Latin roots from which medical and scientific terminology is derived. Extensive practice in analysis of terms. Practice in use of Latin nomenclature.

310 The Ancient World: Greece (3) Development of Athenian democracy: its successes and failures; Polis crisis of the fourth century B.C.; emergence of hellenistic civilization. (Same as History 310.)

311 The Ancient World: Rome (3) (Same as History 311.)

331 Archaeology of the Aegean Bronze Age and Early Greece (3) Includes Troy, the Cycladic Islands, the Greek mainland, Crete, and Cyprus ca. 3000-700 B.C. Rise and fall of the Minoan and Mycenaean civilizations and their effect on the Aegean World and Cyprus. Evidence for daily life, religion, trade, and foreign contacts. Architecture, wall paintings, and artifacts. Prereq: One of the following: 232, 381, ancient history (Ancient Near East or Ancient Greece), or consent of instructor. Writing-emphasis course.

334 Cities and Sanctuaries of the Greek and Roman World (3) Major cities and sanctuaries in Greece, the Greek Colonies, and the Roman Empire. Approach is archaeological, focusing on physical evidence—landscape, architecture and artifacts as well as descriptions of ancient authors. Cities include various types - planned and unplanned, seaports, caravan centers, government and commercial centers. The sanctuaries also vary in function including prophetic centers, athletic centers, theater centers, and healing centers. Writing-emphasis course.

362 Roman Law (3) This course covers the historical development of Roman law in the Classical period (50 B.C.-250 A.D.) with particular attention to the analysis of case-law in terms of contract, property, or delict. (Same as Legal Studies 362.)

381 Greek Civilization (3) Major aspects of ancient Greek civilization: religion, fine arts, political life, pan-Mediterranean relations, the prominence of Athens; the role of modern archaeology in interpretation; emphasis on the sixth and fifth centuries B.C. Writing-emphasis course.

382 Roman Civilization (3) Major aspects of ancient Roman civilization: political institutions, art and architecture, history, culture and daily life, emphasizing the late Republic and early Empire. Writing-emphasis course.

383 Women in the Greek and Roman World (3) The condition of women in the apparently male-dominated world of Classical Greece and Classical Rome. Evidence from literature, vase paintings, and other arts is examined from the age of Homer to the second century A.D. with emphasis on Athens in the fifth century B.C. and Roman Italy in the first and second centuries A.D. (Same as Women’s Studies 383.)

441 Special Topics in Classical Civilization (3) Topics in art, literature, religion, and society of Greece and Rome. May be repeated up to three times with consent of department.

461 Studies in Classical Archaeology (3) Variable content course offering subject matter not taught in an existing course, or concentration on one aspect of the existing survey. May be repeated. Maximum 9 hours. Prerequisites according to topic.

491 Foreign Study (1-15)

492 Off-Campus Study (1-15)

493 Independent Study (1-15)

CO LegESHO LARS HonorS (509)

317-318 College Scholars Seminar (1,1) Sequence (in any order) limited to and required of all College Scholars each year. May be repeated. Maximum 8 hours. Satisfactory/No Credit grading only.
COMMUNICATION (259)

100 Introduction to Mass Communication (3) Overview of systems of mass communication, with emphasis on American media, their ownership, legal and social controls, role and effects. Advertising, broadcasting, journalism and publishing, and public relations are examined in the context of theories of mass communication.

150 Communication in an Information Age (3) Overview of current and emerging communication systems including print, broadcast, multichannel video, telephony, and the Internet. Particular emphasis is given to the development of communication systems and their role in society.

300 Communication Research Methods (3) Social science research methods, especially sample surveys, used by communication media. Applications to internal decision-making and to external communication in media. Prereq: Journalism 200, or Advertising 350, or Electronic Media 310 or 320, or Speech Communication 350, or consent of instructor. (Same as Legal Studies 300.)

400 Mass Communication Law and Ethics (3) Emphasis on legal issues directly affecting the mass media: libel, privacy, free press, fair trial, judicial controls, governmental regulations. Also includes ethical standards and practices of the mass media in America. Prereq: Journalism 200, or Advertising 350, or Electronic Media 310 or 320, or Speech Communication 350, or consent of instructor. (Same as Legal Studies 400.)

450 On-Line Electronic Publishing (3) Cross-disciplinary approach to design and production of on-line publications. Emphasis on researching, planning, site content and design, and the economic, legal and ethical issues involved in online publishing. Prereq: Senior standing and consent of instructor.

COMPARATIVE LITERATURE (260)

202-203 Cross-Cultural Perspectives in World Literature (3,3) Literary perspectives and values in different time periods and cultures approached from an international context and including an introduction to the theory, methods, and objectives of comparative literature. Variable content. Writing-emphasis course.

401-402 Special Topics in Comparative Literature (3,3) Content varies. May be repeated. Maximum 9 hours.

452 Modern Drama, 1880-1945 (3) (Same as English 452.)

454 Twentieth-Century International Novel (3) (Same as English 454.)

491 Foreign Study (1-15)

492 Off-Campus Study (1-15)

493 Independent Study (1-15)

COMPARATIVE AND EXPERIMENTAL MEDICINE (262)

411 Undergraduate Research Participation (1-3) Experience in active biomedical research projects under supervision of faculty. Students in pre-medicine and other biology majors may conduct their own research projects within designated areas. Prereq: Junior or senior standing; prior consent of faculty. May be repeated with consent. Maximum 9 hours. Satisfactory/No Credit grading only.

COMPUTER ENGINEERING, ELECTRICAL AND

See Engineering Electrical and Computer

COMPUTER SCIENCE (266)

100 Introduction to Computers and Computing (3) Basic concepts of computer hardware and software. Microcomputer systems and workstation. Networking and the Internet. The interdisciplinary science of computing. Does not satisfy any requirements for Computer Science major or minor. 2 hour lab required.

102 Introduction to Computer Science (4) Problem solving and algorithm development. Organization and characteristics of modern digital computers with emphasis on developing good programming habits, building abstractions with procedures and data, and programming in a modern computer language. Students who have received credit for 140 or 160 may not also receive credit for 102 without consent of instructor.

140 Data Structures (4) Advanced problem solving and algorithm development, structured programming, data structures and applications, 0/1-techniques, lists, queues, trees, algorithms, and files. Prereq: 102. 3 hour lab required.

160 Computer Organization (4) Number systems, Boolean algebra, combinatorial and sequential circuits, registers, processor functional units and control, pipelining, memory and caching, stored program computing, memory management, computer system organization, assembly language programming. Prereq: 102. 3 hour lab required.

291 Lower-Division Special Topics (1-3) Topics vary. Programming languages, operating systems and application software packages. May be repeated. Maximum 9 hours.

300 Scripts and Utilities (1) Practical tools available under Unix to enable students to become more efficient in performing labs and research projects. Topics to be covered include: sh, cat/grep/find/sort/adj/fd/sed/awk, perl, python, make, rcs, jgraph, gcc/cpp/ ld/purify/quantify. Prereq: 140 or consent of instructor. Satisfactory/No Credit grading only.

302 Fundamental Algorithms (3) Design, analysis, and implementation of fundamental algorithms, such as sorting and searching, and their data structures. Prereq: 140 and 160. 3 hour lab required


340 Foundations of Software Engineering (3) Principles of analysis and design of information systems. Principles of program design and verification, formal objects, formal specifications. Prereq: 140, 160, 311. 3-hour lab required.

360 Systems Programming (3) Introduction to user-level systems programming; file control, process control, memory management, system utilities, network programming. Prereq: 302. 3 hour lab required.

365 Programming Languages and Systems (3) Language paradigms (procedural, functional, object-oriented, logic), language design and implementation issues and language issues related to parallelism. Prereq. 302.

370 Introduction to Scientific Computing (3) The design, analysis, and implementation of numerical algorithms for solving problems in science and engineering. Emphasis on program design, including data structures, computational complexity, scientific computing environments, and high-performance software packages. Prereq: Mathematics 241 or 251. 3 hour lab required.

380 Theory of Computation (3) Countability and diagonalization. Finite automata and regular languages, push-down automata and context-free languages. Introduction to Turing machines and undecidability. Prereq: 140, 160, and 311.


420 Advanced Topics in Machine Intelligence (3) Topics such as search, learning, expert systems, neural networks, pattern recognition and natural language processing. Emphasis on faculty research. May be repeated. Maximum 9 hours. Prereq: Completion of core curriculum or consent of instructor.

430 Advanced Topics in Hardware Systems (3) Topics such as architecture, parallel processors, microprogramming, networks and communications. Emphasis on faculty research. May be repeated. Maximum 9 hours. Prereq: Completion of core curriculum or consent of instructor.

460 Advanced Topics in Software Systems (3) Topics such as operating systems, compilers, parallel computation, software engineering, database systems and programming languages. Emphasis on faculty research. May be repeated. Maximum 9 hours. Prereq: Completion of core curriculum or consent of instructor.

470 Advanced Topics in Scientific Computation (3) Topics such as numerical methods, supercomputers and computer modeling and simulation of physical systems. Emphasis on faculty research. May be repeated. Maximum 9 hours. Prereq: Completion of core curriculum or consent of instructor.

471 Numerical Analysis (3) (Same as Mathematics 471.)

472 Numerical Algebra (3) (Same as Mathematics 472.)

480 Advanced Topics in Theoretical Computer Science (3) Topics such as theory of computation, complexity theory, formal languages and graph theory and its applications. Emphasis on faculty research. May be repeated. Maximum 9 hours. Prereq: Completion of core curriculum or consent of instructor.

493 Independent Study (1-15) Special project in area of student’s primary interest. Directed by Computer Science faculty, perhaps jointly with student’s faculty advisor. Intended for students with a specific project to pursue in conjunction with a faculty member. Project may be from a department other than Computer Science in which case a faculty member from the appropriate department will help oversee the project. May be repeated. Maximum of 6 hours may be applied to the major. Prereq: Consent of instructor.

494 Special Topics in Computer Science (1-3) May be repeated. Maximum 9 hours.

COUNSELOR EDUCATION (255)

205 Student Development (1-3) Practice in acquiring knowledge and skill in areas such as interpersonal relations, career decision-making, communication and self-awareness. Individual and small-group format. May be repeated. Maximum 6 credit hours. Satisfactory/ No Credit grading only.

206 Facilitation of Technical Work Teams (3) Psychological and cultural dynamics of technical work team performance. Supervised experience in leading work teams. For engineering students sophomore level and above. Letter grade only.

212 Career and Personal Development (3) Systematic approaches to facilitating career development and life planning.

215 Learning Skills and Study Systems (3) Approaches to enhancing academic performance through study skills, efficient understanding of personal factors.


404 Special Topics (1-3) Instructor initiated course of offered at convenience of the department on various topics of current interest. Contact department for listing of topics to be covered. May be repeated. Maximum 15 hours.
410 Sex Role Development: Implications for Education and Counseling (3) Theories and research concerning the development of sexual role and its relevance in educational and counseling settings. (Same as Counselor Education 410.)
431 Personality and Mental Health (3) Perspectives of mental health with applications to education and other social institutions. (Same as Educational Psychology 431.)
493 Independent Study (1-15) Independent investigation of problems in educational and counseling psychology. May be repeated. Maximum credit 15 hours.

CULTURAL STUDIES IN EDUCATION (271)
400 Professional Studies: Teachers, School, and Society (2) Focus on roles and responsibilities of teachers, on how schools are organized and the relationship between the schools and the broader society. Prereq: or Coreq: Educational Psychology 210. Prereq: Admission to Teacher Education.

DANCE (274)
101 Practicum: Dance Production (1) Supervised technical and promotional production aspects of university dance company. May be repeated. Maximum 2 hours.
201 Practicum: Dance Performance (1-2) Preparation and presentation of university dance company performances. Participation through audition only. May be repeated. Maximum 16 hours.
210 Ballet: Level I (2) Instruction and practice in elementary classical ballet techniques. May be repeated. Maximum 4 hours.
220 Jazz: Level I (2) Instruction and practice in elementary jazz dance styles and techniques. May be repeated. Maximum 4 hours.
230 Modern: Level I (2) Instruction and practice in elementary modern dance techniques. May be repeated. Maximum 4 hours.
240 Tap: Level I (2) Instruction and practice in elementary tap dance techniques. Available to minors or with consent of instructor. May be repeated. Maximum 12 hours.
320 Jazz: Level II (2) Instruction and practice in intermediate jazz dance styles and techniques. Available to minors or with consent of instructor. May be repeated. Maximum 12 hours.
330 Modern: Level II (2) Instruction and practice in intermediate modern dance styles and techniques. Available to minors or with consent of instructor. May be repeated. Maximum 12 hours.
340 Tap: Level II (2) Instruction and practice in intermediate tap dance techniques. Prereq: 240 or consent of instructor.
380 Special Topics (1-3) Selected disciplinary or professional areas of dance. May be repeated.
410 Ballet: Level III (2) Instruction and practice in advanced classical ballet techniques. Available to minors or with consent of instructor. May be repeated. Maximum 16 hours.
415 Teaching Creative Dance for Children (2) Theory, methods, materials and practical experience in the presentation and integration or creative dance in grades K-6. A mini-teaching experience is involved in this class.
420 Jazz: Level III (2) Instruction and practice in advanced jazz and musical theater dance styles and techniques. Available to minors or with consent of instructor. May be repeated. Maximum 16 hours.
430 Modern: Level III (2) Instruction and practice in advanced modern dance techniques. Available to minors or with consent of instructor. May be repeated. Maximum 16 hours.
440 Composition I (2) Composition I (2) Choreographic skills emphasizing the basic techniques and concepts of dance composition. This course focuses on the choreography of solos and duets. Prereq: 4 hours credit in upper level modern dance technique (330 or 430) or approval of instructor.
445 Composition II (2) Choreographic skills emphasizing the advanced techniques and concepts of dance composition. This course will focus on the choreography of group works and the technical aspects of production. Prereq: 440 or approval of instructor.
480 Dance History through the 19th Century (3) Survey of the dance of various societies and cultures from prehistory through the nineteenth century. Senior standing or graduate status required for graduate credit. Different level of performance is expected of those registered for graduate credit.
490 Dance in the 20th Century (3) Survey of history and philosophy of dance in the 20th century. Senior standing or graduate status required for graduate credit. Different level of performance is expected of those registered for graduate credit.
493 Directed Independent Studies (1-15) Independent study in a specialized area with departmental faculty and resources. Satisfactory/No Credit grading only. Prereq: Admission to Teacher Education.

EARLY CHILDHOOD EDUCATION (279)
410 Early Childhood Special Education Foundations (3) Introduction to the field of early childhood special education including the nature of disabling conditions; theoretical perspectives in the field; legislation; policies and procedures used in the field. Prereq: Admission to Teacher Education Program.
422 Early Childhood Teaching Methods (6) Methods and materials for teaching in early childhood classrooms focusing on K-4th grade. Emphasis on holistic integrative approaches to curricular development and presentation. Prereq: Pre-K-4 licensure program and admission to Teacher Education.
445 Early Childhood Education: Program Development and Teaching in Kindergarten (3) Curriculum planning, classroom organization and management practices for teaching young children; relationship of kindergarten to total elementary school. Prereq: Admission to Teacher Education Program.
471 Early Childhood Special Education (6) Assessment, curriculum planning and development and teaching approaches used in early childhood special education. Prereq: Admission to Teacher Education Program.
472 Field Experience in Early Childhood Special Education (2-5) Placement in educational settings serving young children with special needs. Provides experience in assessment, curriculum planning and teaching. Prereq: Admission to Teacher Education Program. Satisfactory/No Credit grading only. May be repeated. Maximum 5 hours.

ECOLOGY AND EVOLUTIONARY BIOLOGY (278)
202-203 Ecology and Evolutionary Biology Colloquium (1,1) Weekly discussions of selected topics in ecology, biogeography, and evolutionary biology including undergraduate research and career opportunities, for declared and potential departmental majors. Course familiarizes students with the contemporary research and its applications and introduces them to departmental faculty and resources. Satisfactory/No Credit grading only. Prereq: Biology 101-102 or equivalent.
240 Human Anatomy (4) Gross and Microanatomy of the human. Credit may not be applied toward Ecology and Evolutionary Biology major. Prereq: Biology 101 or 102 or 130 or 140 or equivalent introductory biology course. 3 hours lecture, 3 hours lab.
305 Evolution and Society (3) Issues and controversies surrounding the teaching and learning of evolution in America today. May not be applied to Evolutionary Biology major. Prereq: General Biology or Anthropology 110 or consent of instructor. Writing emphasis course. (Same as Anthropology 305.)
350 Comparative Vertebrate Biology (4) Origins, phylogeny, diversity and functional anatomy of vertebrates. Laboratory involves dissection of shark, cat, and selected other vertebrates. 2 hours and 2 labs.
360 Comparative Invertebrate Biology (4) Origins, phylogeny and functional anatomy of invertebrates with emphasis on diversity of life forms and adaptations to specific local environments. 2 hours and 2 labs.
370 Ethology and Sociobiology (3) Basic concepts in the evolutionary approach to behavior, including applications to psychology, the social sciences, and the humanities. (Same as Psychology 370.)
380 General Entomology (3) Introduction to insects: basic structure, physiology, behavior, evolution and classification of insect orders. 2 hours and 1 lab.
400 Undergraduate Research (1-2) Research projects under supervision of faculty. Prereq: prior consent of instructor. May be repeated for a maximum of 8 hours, but a maximum of 4 hours may be applied toward the Biology major.
402 Practicum in Ecology and Evolutionary Biology (2) Participation in individualized practical applications of ecology, behavior, and evolutionary biology in community, government, and industry. Prereq: Biology 140, 240, 250 and prior consent of instructor.
407 Senior Honors Thesis (3) Written preparation and oral presentation of faculty-supervised student research. Prereq: Admission to Honors program in Ecology and Evolutionary Biology and 400 or equivalent.
409 Perspectives in Ecology and Evolutionary Biology (3) Forefront considerations of ecology, behavior, and evolutionary biology. Emphasis on current developments for implications, including societal and economic impacts and moral and ethical implications. Writing emphasis course. An oral presentation and a referenced library-research essay are required.
411-412 Minicourse in Ecology and Evolutionary Biology (2) Selected advanced topics in ecology, behavior, and evolutionary biology, concentrated in time and subject matter. Consult departmental listing for topics offered. Prereq: As announced. May be repeated for credit but a maximum of 4 hours may be applied toward the departmental major.
419 Science as Method (3) The dynamic process of scientific discovery, as opposed to a static body of knowledge. Topics included will be comparisons of science, non-science, and pseudoscientific success and unsuccessful science, the ethics of scientific research, and the philosophical aspects of the scientific enterprise. Implications for teaching and writing about science will be covered. Prereq: an introductory science or philosophy course, or consent of instructor. (Same as Botany 419 and Philosophy 419.)
431 Plant Ecology (3) (Same as Botany 431.)
446 Introduction to Oceanography (4) Basic oceanography, including physical, chemical, geological and biological processes and patterns. Emphasis on oceanic subsystems such as upwellings, polar oceans, hydrothermal vents, gyres, coral reefs, estuaries, and coastal margins. Field trip to coast required. Prereq: General Biology and Chemistry 120, 130; Biology 250 recommended.
450 Comparative Animal Behavior (3) Principles and methods of ethology with emphasis on ecological, developmental, physiological and evolutionary aspects. (Same as Psychology 450.)
459 Comparative Animal Behavior Laboratory (3) Introduction to observational and experimental research in ethology. Coreq: 450. (Same as Psychology 459.)
462 Evolution (4) Principles, facts, and theories regarding biological evolution. Concepts and processes and product in development of organic diversity. Historical development of ideas concerning biological evolution. Prereq: Biology 240 or consent of instructor. 3 hrs. lecture and 2 hrs. lab discussion.

224 COURSES OF INSTRUCTION
ECONOMICS (283)

201 Introductory Economics (3) A Survey course (4) Theory of consumer behavior, theory of firms, supply and demand, costs of production, market models, national income and employment theory, money and banking, monetary and fiscal policy, debt, and international economics.

207 Honors: Introductory Economics (4) Honors course for students of superior ability and interest. Students accepted on the basis of their records.

311 Intermediate Macroeconomics (3) Theories of consumer behavior, of production and costs, of price and behavior of firms in perfectly competitive, monopolistic and imperfectly competitive markets, input prices, income distribution, welfare and general equilibrium. Prereq: 201.


321 International Economics (3) Balance of payments, exchange rate determination, monetary and fiscal policies, monetary arrangements, comparative advantage, tariff and nontariff trade distortions, protection arguments, regional integration. Prereq: 201.

323 Economic Development (Third World) (3) Overview of the international economic issues facing developing countries and other emerging markets. Theories of growth and policies used to promote economic improvement. Prereq: 201 or permission of instructor. Writing-emphasis course.

331 Government and Business (3) Antitrust and regulatory economics, problems in regulation and social control of business organization, oligopoly models. Prereq: 201.

334 Survey of Labor Economics (3) Introduction of economic principles to labor markets, public policy questions, demand and supply, theory of wage differentials, unemployment, unions in the private sector, investment in individuals, education and training, mobility. Prereq: 201.

351 Monetary Economics (3) Role of money in the economy, Federal Reserve System, evaluation of monetary policy, U.S. depository institutions and money supply process. Prereq: 201.

361 Regional and Urban Economics (3) Overview of regional differences. Theory of industrial and agricultural location and human migration, economic basis for land use patterns, central places, and urban form, regional and urban structure, growth, and methods of analysis, examination of urban problems. Prereq: 201.

381 Information Management for Economists (3) Analysis of historical data, methods of analyzing macroeconomic fluctuations, theoretical explanations of cycles, and the role of monetary and fiscal policies in the aggregate economy. Prereq: 313 or consent of instructor. Writing-emphasis course.

413 Macroeconomic Fluctuations (3) Analysis of historical data, methods of analyzing macroeconomic fluctuations, theoretical explanations of cycles, and the role of monetary and fiscal policies in the aggregate economy. Prereq: 313 or consent of instructor. Writing-emphasis course.

415 Western Economic Thought Since the 18th Century (3) History of study of economic thought. Beginnings of the classical and neoclassical schools of thought in the economic thought of Keynes and his followers, principal developments of second half of 20th century. Major writing requirement. Prereq: 201 or equivalent and consent of instruction. Not available for graduate credit in history. (Same as History 415)

345 Interpreting in Educational Settings (4) Covers issues related to working with deaf and hard of hearing children in mainstream programs. Examines interpreter roles and responsibilities within the classroom setting. Practicum experiences.

350 Voice to Sign Interpretation (3) Interpreting from English to sign language in a variety of physical settings (one-to-one, classroom, assemblies) for students of all ages with varying communication styles; adjusting interpretation to accommodate different student needs. Cross-cultural communication issues interpreting in a manner appropriate to the context; techniques for reducing visual fatigue and overload.

355 Sign to Voice Interpretation (3) Interpreting from sign language to English in a variety of physical settings (one-to-one, classroom, assemblies) for students of all ages with varying communication styles. Selecting appropriate to the context. Attention is also given to cross-cultural communication issues.

431-432 American Sign Language III and IV (3,3) Sequence stresses fluency of expression, communication skills. Using language in context is emphasized. Grammatical structures of ASL and cultural implications of the deaf community. Must be taken in sequence. Prereq: for 431: 226 or consent of instructor. Prereq: for 432: 431 or consent of instructor.

435 Linguistics of American Sign Language (3) Introduction to grammatical and linguistic structures of ASL. Language variations, discourse, bilingualism and language contact also covered. Conducted in ASL. Prereq: 431 or consent of instructor.

440 Educational Interpreting Field Work (6) Practical field experience within approved and supervised mainstream settings. Develop specific interpreting skills. Provides a direct service experience in a real learning environment. For majors only. Prereq: progression to the major. Satisfactory/No Credit grading only.

EDUCATIONAL PSYCHOLOGY (310)

210 Psychoeducational Issues in Human Development (3) Understanding and application of the psychology of human development to teaching/learning process in educational settings. Primarily for students entering teaching or Human Services.

215 Learning Skills and Study Systems (3) Approaches to enhancing academic performance through study skills, efficient reading and understanding of personal factors.

401 Professional Studies: Applied Educational Psychology (2) Application of concepts, principles, techniques and models from Educational Psychology to facilitate student learning and creation of effective classroom environments. Prereq: Admission to Teacher Education.

404 Special Topics (1-3) Instructor initiated course offered at convenience of the department on various topics of current interest. Contact department for listing of topics to be covered. May be repeated. Maximum 15 hours.

431 Personality and Mental Health (3) (Same as Counselor Education 431.)

432 The Disadvantaged Student: Psychoeducational Perspectives (3) Theory and research regarding etiology, psychosocial behavior and appropriate interventions.

460 Self-Management in the Helping Professions (3) Applications of self-management strategies to career, social, emotional and health domains for both helping professionals and their clientele. Prereq: Introductory course in psychology or permission of instructor.

493 Independent Study (1-15) Independent investigation of problems in educational and counseling psychology. May be repeated. Maximum credit 15 hours.

ELECTRICAL AND COMPUTER ENGINEERING

See Engineering Electrical and Computer

ELECTRONIC MEDIA (315)

275 Introduction to Radio and Television (3) Lecture and lab course providing students with an overview of radio, television, cable, and related technologies. Includes history, programming, regulations, and effects of radio and television on society. Students gain practical experience in radio at WUTK-FM. Prereq: Communication 100 or Speech Communication 100.

310 Radio-TV News (3) Writing and reporting for electronic media. Lecture and lab course with writing emphasis. Includes work experience at WUTK-FM. Prereq: 275.


330 Audio/Video Production (3) Emphasis on the function and operation of the primary video and audio tools to develop effective communication. Lecture and laboratory provide experience in studio production process and procedures. Includes concept development, script writing, message design, applied aesthetics, crew management, and producing. Prereq: 275.

360 Radio-TV Performance (3) Development of vocal, visual, and performance skills for announcers, interviewers, narrators, reporters, and newscasters. Laboratory hours required. Prereq: 275.

410 Electronic News Gathering (3) Writing, reporting, and producing for electronic media. Lecture and lab course providing students with experience as reporters and producers for a television news program. Includes an overview of electronic news gathering equipment and techniques as well as video editing. Prereq: 310.


430 Electronic Field Production (3) Basic principles of video production on location. Emphasis on the concepts relating to message design, development, and production in the field. Includes concept development, script writing, shooting, graphics, sound design, lighting, and editing. Prereq: 330 or consent of instructor.

440 Corporate Video (3) Examination of special requirements of business, industrial, educational and medical uses of video. Management, budgeting, planning, producing, and evaluating projects. Prereq: 430 or consent of instructor.


460 Broadcast News Operations (3) Production of news program for broadcast on television stations. Electronic news gathering, editing and writing news packages, and studio production. Prereq: 410 or consent of instructor.

470 Cable, Broadband, and Interactive Digital Media (3) History and structure of cable television and other broadband delivery systems (DBS, Internet, etc.). Development of digital broadcasting, interactive television, and other broadband media systems and digital technologies. Regulatory, policy, programming, and management issues arising from new media and digital technologies. Prereq: 275 or consent of instructor.


490 Radio and Television Management (3) Business policies and practices of broadcast operations, departmental functions, cost and income analysis, leadership styles and techniques with an emphasis on mid-level management. Capstone course to be taken in student’s last semester. Prereq: Senior standing.

492 Practicum (1) Work and learning experience at radio, television, cable or non-broadcast facilities. Final written report required. May be repeated once. Prereq: Senior standing and consent of department head. Satisfactory/No Credit grading only.

494 Special Topics (3) Salient issues in electronic media. Topics vary. Prereq: Consent of instructor. May be repeated. Maximum 6 hours.

498 Internship (3) Full-time (30 - 40 hrs per week) work experience in news, production, or sales and management with non-university professional organization. Educational experience beyond that available at university. Final term paper. No retroactive credit for previous work experience. Prereq: Senior or graduate standing, completion of at least 15 hrs of broadcasting courses, GPA 3.0 or better, and consent of department head.
341 Fluid Mechanics (3) Introduction to fluid flow concepts; hydrostatics; development of mass, momentum, and energy conservation laws in integral and differential forms; dimensional analysis and similitude; viscous laminar and turbulent flows in pipes; introduction to boundary layers. Prerequisites: Mechanical Engineering 231, Mathematics 241.

345 Aerospace Engineering Instrumentation and Measurement (3) Fundamentals of measurement systems; standards; dynamic characteristics of instruments; statistical data treatment; transducers; signal conditioning; strain, pressure, temperature and flow measurements. Coreq: Mechanical Engineering 363. Prereq: 341, Electrical and Computer Engineering 301.

351 Compressible Flow (3) One-dimensional internal flow with shocks, friction and nonadiabatic conditions. Two-dimensional external flows. Prereq: 341, Mechanical Engineering 332.


401 Thesis (3) Problem investigation and report. Prereq: Senior standing.

422 Aerodynamics (3) Theory and design of aerodynamic bodies for desired characteristics. Potential flow theory, viscous effects, compressibility effects. Subsonic, transonic, and supersonic airfoils. Prereq: 351, 370.

424 Astronautics (3) Orbital mechanics, propulsion, atmospheric reentry of space vehicles including reentry thermal protection materials, human factors in space flight, the space environment and space vehicles. Prereq: 351, Coreq: Mechanical Engineering 344.

425 Propulsion (3) Principles of propulsion devices; turbojet, ram jet and rocket engines. Prereq: 351.

426 Introduction to Aerospace Design (2) Design process, synthesis, safety, reliability, patents, product liability, economic analysis, optimization design, standards design, design studies. Individual design reports required. Prereq: 351, 370, 363. Coreq: Mechanical Engineering 344.

429 Aerospace System Design (4) Synthesis and design of a complete aerospace system. Participation in team design effort including formal presentations and design report. Prereq: 422, 425, 426.

431 Mechanical Engineering/Aerospace Engineering Seminar (1) Topics related to engineering in biomedicine. Formal oral presentations by students on engineering topics. Prereq: Senior standing.

449 Aerospace Engineering Laboratory (Designing, conducting, and reporting results of experimental exercises. Test standards and specifications. Analysis of data and formation of conclusions. 3 hours lab per week. Prereq: 345, 351, 375.

494-495 Selected Topics in Aerospace Engineering (1-4) Problems and topics related to developments and practice in aerospace engineering. Prereq: Consent of instructor.

ENGINEERING BIO MEDICAL (192)

271 Introduction to Biomedical Engineering (3) Application of the skills developed in Engineering Fundamentals for biomedical engineers. The role of biomedical engineers in the design of artificial organs, orthopedics implants, medical imaging, and other biomedical applications with an emphasis on developing communication and teaming skills. Prereq: Engineering Fundamentals 102.

300 Engineering Physiology (3) The study of human physiology, with an emphasis on making engineering decisions, and the development of analytical and computational models. Prereq: Consent of instructor.

310 Biomechanics (3) The application of statics, dynamics, mechanics of materials, and fluid mechanics to biomedical engineering problems. The special characteristics of living tissue and biological fluids and their incorporation into computational problems will be introduced. Prereq: Mechanical Engineering 312, Aerospace Engineering 341.

320 FDA Regulation of Biomedical Devices (1) Federal medical device law and regulation requirements; pre-market approval of new medical devices. Consent of instructor.


401 Thesis (3) Research and design problems in biomedical engineering with prior approval of a professor. May be repeated up to a maximum of 6 hours. Prereq: Senior standing or consent of instructor.


430 Biomedical Engineering Laboratory (3) This course provides experience with the unique challenges associated with making measurements and interpreting data in living systems; experiments may include mechanical testing of biological materials, imaging and physiological measurements. (EKG, EMG, ECG, etc.) Prereq: 310 and 346 or consent of instructor.

431 Biomedical Seminar (1) Professionalism, teamwork, P.E. licensing, patents and intellectual property, product liability, ethics and other issues related to biomedical engineering. Formal written and oral reports. Prereq: Senior standing.

435 Bioinstrumentation (3) Nature of biomedical signals, transducers, signal processing, noise, telemetry and display devices. Prereq: 300 and Electrical and Computer Engineering 301.


471 Biomedical Engineering Design II (4) Design of complete biomedical device: documentation includes complete specification, design calculations, preparation of working drawings, and cost analysis. Written and oral reports. Prereq: 455.


494-495 Special Project in Biomedical Engineering (1-3, 1-3) Problems related to recent developments and practice. May be repeated once for credit. Prereq: junior or senior standing, consent of instructor.

ENGINEERING CHEMICAL (226)


230 Introduction to Chemical Engineering Thermodynamics (3) Introduction to the laws of thermodynamics, state functions, and their conceptual basis. Ideal systems, the gas laws, Raoult’s law, and deviations from ideal behavior (fugacity and activity). Introduction to the principles of statistical mechanics and quantum mechanics. Prereq: Engineering Fundamentals 102, Chemistry 130. Coreq: 200, Mathematics 142.

240 Fluid Flow and Heat Transfer (4) Force, energy and chemical energy balances; flow in tubes, piping systems, packed d fluidized beds; pumping and metering; steady and unsteady state heat conduction; heat transfer in tubes and heat exchangers; radiation. Prereq: 200, Coreq: Mathematics 231.

250 Application of Chemical Engineering Thermodynamics (3) Basic concepts related to chemical engineering applications of thermodynamics; emphasis on flow processes, real gases and liquids, estimation of physical properties, phase equilibria of industrial mixtures, compressors, power cycles, and chemical reaction equilibria. Prereq: 200, 230.

301 Chemical Engineering Data Analysis (3) Analysis of experimental data; identification of system extremals; statistical properties of samples; empirical modeling of processes; statistical process control; optimization techniques. Prereq: Mathematics 200, 142.

310 Chemical Engineering Laboratory (3) Thermodynamics, fluid flow and heat transfer in chemical engineering. Prereq: 240. Coreq: 230, 301.

340 Mass Transfer and Separation Processes (3) Stagewise operation; application of analytical, graphical and computer methods to design of stagewise separatory operations. Differential operations application of analytical and computer methods to the design of diffusive processes. Applications include gas absorption, distillation, extraction, humidification, ion exchange and membrane separations. Prereq: 200, 230.


380 Seminar (1) Presentation and discussion of topics in the practice of chemical engineering. Satisfactory/No Credit grading only.

394 Chemical Engineering Co-op (1) Co-op experiences in Chemical Engineering. Technical report writing and presentations. Prereq: Permission of instructor. May be repeated.


407 Honors Seminar (1) Presentations and discussions on topics of importance to chemical engineering. Prereq: Consent of instructor. Satisfactory/No Credit grading only. May be repeated once.

408 Honors Seminar (1) Presentations and discussions on topics of importance to chemical engineers. Prereq: Consent of instructor. Satisfactory/No Credit grading only. May be repeated once.

410 Chemical Engineering Laboratory II (3) Laboratory investigations of mass transfer and chemical reaction phenomena in chemical engineering. Prereq: 310, 450, or permission of instructor.

415 Computer Applications in Chemical Engineering (3) Introduction to computer solution of chemical engineering problems. Primary focus on the application of personal computers and computer programs. Includes flow sheet simulators, statistics, spreadsheets, graphics and process modeling. Prereq: 340.


445 Separation Process Technology (3) Multicomponent distillation, theory and computer simulations; humidification; specialized technologies, including membrane separation, crystallization, dialysis, adsorption, ion exchange, etc. Prereq: 340.
470 Honors: Transport Phenomena (3) Overview of momentum, heat and mass transfer processes, the analogies, differential and macroscopic balances, applications involving molecular diffusion, including simultaneous mass transfer and chemical reaction. Prereq: 205 and consent of instructor.

459 Chemical Reactor Fundamentals (3) Homogeneous and heterogeneous reaction kinetics; idealized homogeneous reactor models, both for closed and flow systems; corrections for non-ideal residence time distributions; identification of scaling parameters; catalyst effectiveness factors and conversion in fixed bed catalytic reactors. Prereq: 240, 340, 390.

460 Chemical Reaction Engineering (3) Interfacing kinetic models with the steady-state analysis of chemical processes. Prereq: 240, 340, 390.

461 Hydrodynamics (3) Basic laws and properties of incompressible fluids. Units and dimensional analysis; drag forces; continuity, energy, and momentum equations; pipe flow; flow measurement; open channel flow and culverts; pump characteristics. 3 hours, 1 lab. Prereq: 205 or Biosystems Engineering 243; Engineering Fundamentals 102; Nuclear Engineering 203.

475 Hydrology (3) Concept of hydrologic cycle; weather patterns; precipitation measurement and distribution, abstractions, and runoffs; storm hydrograph and peak flow analyses, including design floods; reservoir and channel routing; rainfall and streamflow frequency analysis; groundwater flow. Prereq: 205 and consent of instructor.

470 Senior Design Project (3) Open-ended, comprehensive project emphasizing team approach to design process. Includes problem formulation, site planning, project management, approaches to solutions, and criteria specification, estimating costs, and various project components typical of those faced by practicing civil engineers. Prereq: Must be taken during the term of graduation. Summer graduates must take during their last preceeding term.

401 Review of Engineering Fundamentals (1) Review of selected topics covered on the Fundamentals of Engineering exam. Emphasis is on those topics relating to Civil and Environmental Engineering. Letter grade only. Prereq: Must be taken during the last 15 credits of the curriculum.

409 Special Topics (1-3) Recent developments and current practice in civil and environmental engineering through field internship and/or self-study. Prereq: Consent of instructor and department head. May be repeated.

421 Portland Cement Concrete Mix Design and Analysis (3) Aggregate properties and tests, tests of portland cement and concrete, mix design methods, admixtures, and nondestructive testing. Two lectures and 1 lab. Prereq: 321.

431 Geodetic Engineering (3) Influence of geodetic origin and history on the engineering characteristics of rocks and soils; applications of geology in the planning, design and construction of civil engineering projects. 2 hours lecture, 1 hour lab. Prereq: 330 or consent of instructor.

435 Foundation Engineering (3) Fundamentals of geotechnics applied to design and analysis of soil-structure systems; subsurface investigation; design of shallow and deep foundations on rock. Lateral earth pressure and retaining structures. Prereq: 330.

440 Civil Engineering Systems Design and Management (3) Methods of data analysis and modeling of civil engineering systems to enhance resource allocation for specific application to problems of transportation, environmental, water resources, structural analysis materials. Emphasis on microcomputer applications. Prereq: Senior standing and Statstics 251.

442 Construction Methods and Equipment (3) Fundamental operations in construction: selection and procurement of materials; concrete and steel construction; and construction contracts and economics. Prereq: 330.

451 Highway Engineering (3) Design, construction, operation, and maintenance of highway facilities; includes application of various engineering principles and techniques to traffic of highway facilities; covers both geometric and pavement design. Prereq: 210, 251, 352.

452 Traffic Engineering (3) Characteristics of driver, vehicle, and roadway and their interrelationships; traffic studies; basic considerations of traffic circulation and control, lighting, capacity analysis, roadway safety analysis and design. Prereq: 210, 251, 352.

453 Airport/Railroad Planning and Design (3) Airport master planning and railroad engineering: airfield configuration, airfield capacity, geometric design, and layout and design. Railroad capacity, geometric and system layout and design. Prereq: 210, 251, 352.

462 Analysis of Framed Structures (3) Structural analysis; computer in structural analysis; building modeling and analysis. Prereq: 361.

471 Introduction to Structural Design (3) Selection of rolled structural steel beams, design of structural steel members for axial tension and compression loads, reinforced concrete beams; use of standard specifications. Prereq: 361.

472 Steel Design (3) Design of plate girders and composite beams; consideration of members subjected to combined stresses; design of typical framed building including connections. Prereq: 471.

474 Reinforced Concrete Design (3) Design of continuous beams, floor slabs, and columns with combined axial loads and bending, footings; and design for torsion. Prereq: 471.

480 Water and Waste Transport (3) Theory and design of water distribution systems, and wastewater collection systems. Prereq: 390.

485 Principles of Hydrogeology (3) Same as Geology 485.

486 Air and Waste Management (3) Principles of air quality management, solid waste management and hazardous waste management. Review of regulations, environmental quality, transport of pollutants, and control technologies including treatment and disposal. Prereq: 390 or Chemical Engineering 200 or Agricultural Engineering 243.

490 Water Resources Project Design (3) Development of multipurpose reservoir and dam standards. Design of surface data acquisition system and outlet works design; earthen and gravity dam stability analyses; drainage and filters; maintenance and operation principles; and dam safety concepts, including dam break analyses. Prereq: 390, 395.

495 Water Resources Development and Management (3) Institutional framework including: water law, evaluation procedures for comparing and selecting among water resources development alternatives, multi-objective planning, principles of engineering economics, benefit-cost analysis, and cost allocation methods; environmental impact assessment procedures; decisions using risk-based methods; case studies. Prereq: Senior standing.
421 Electric Energy Systems (3) Structure and operation of the electrical energy grid; load flow; economic loading; planning; control; reliability. Balanced and unbalanced faults; system protection; system stability. Includes Level 1 design projects. Prereq: 316, 325.

422 Power System Operations and Planning (4) Dynamic phenomena in power systems. Transient stability assessment and enhancement; direct and indirect methods for stability determination; linear and nonlinear systems analysis; unit commitment, economic dispatch, frequency regulation and automatic generation control. Volt-var control, load management, cogeneration and other topics of contemporary concern. Includes Level 2 design projects. Prereq: 421.

423 Electric Machines (3) Principles of electromechanical energy conversion. Design procedures for AC and DC machine windings; construction and performance constraints. Effects of machine parameters on steady state and dynamic performances; the d-q model; vector control frames. Includes Level 1 design projects. Prereq: 316, 325.

431 Operational Amplifier Circuits (3) Linear and non-linear active circuits using commercial operational amplifiers. Includes operational, instrumentation, isolation, bridge, rms and logarithmic converters, multipliers and function generators, rectifiers, references, active filters, modulation and demodulation, sinusoidal generators. Noise fundamentals and stabilizations in op-amp circuits. Design for specified pole-zero functions. Emphasis on applications including transducer interfacing. Includes Level 1 design projects which require laboratory work. Prereq: 316, 336, 342.

432 Electronic Amplifiers (4) Feedback amplifier principles; wideband linear amplifier design; low-noise preamplifier design; audio power amplifier design; linear regulated power supply design and switching regulator principles. Introduction to radio frequency amplifier design; oscillator principles. Includes laboratory experiments and design projects. Includes Level 2 design projects which require laboratory work. Prereq: 431.

441 Digital Communications (3) Quantization and pulse code modulation. Binary and Message Spectra of line of communication; modem design; error correction techniques. Introduction to the presence of noise, matched filtering and equalization, bandpass digital transmission, introduction to multiple access techniques. Includes Level 1 design projects.

442 Communication System Design (4) Application of communication theory to system design. Development of communication system specifications using a systematic approach utilizing a graphical programming language. Hardware and software design and simulation. Construction and performance evaluation of a complete analog or digital transmitter and receiver for specific sub-systems. Includes Level 2 design projects. Prereq: 441.

443 Antennas and Propagation (3) Introduction to antenna theory including fundamental antenna concepts and parameters (directivity, gain, patterns, etc.) and signal propagation. Theory and design of linear and loop antennas, arrays, and other simple antennas. Includes Level 1 design projects. Prereq: 316, 341, 342.

446 Electromagnetic Compatibility (3) Principles and practices to avoid interference among and within electrical devices. Parameters and coupling for dipole, biconical, and log-periodic antennas. High frequency effects in circuit elements. Radiated and conducted emissions and susceptibility. Crosstalk, shielding, electrostatic discharge, and EMC regulations. Includes Level 1 design projects which require laboratory work. Prereq: 316, 341, 342.

451 Computer Systems Architecture (3) Architecture and design of microcomputer systems with microprocessors or microcontrollers. Instruction set architectures, software interfaces, processor structures, memory hierarchy, interfacing. Includes Level 1 design projects which require laboratory work. Prereq: 336, 342.

452 Design of Digital Systems and Computers (4) Considerations for design and application of digital systems and computers; includes embedded systems concepts and design, CPU issues, interrupt structures, and I/O channels. Includes Level 3 design projects which require laboratory work. Prereq: 451.

453 Computer Network Design (3) Principles of computer networking and software design of network protocol with an emphasis on the internet and TCP/IP protocol suite. Includes Level 1 design projects which require laboratory work. Prereq: 206.

471 Introduction to Pattern Recognition (3) Introduction to statistical decision theory, adaptive classifiers, and supervised and unsupervised learning. Students will explore the application of these techniques in areas of current interest such as face recognition, speech recognition, remote sensing, data mining and bioinformatics. Includes Level 1 design projects. Prereq: 316. Non-majors require consent of instructor.

472 Introduction to Digital Image Processing (4) Mathematical foundations and practical techniques for digital manipulation of images, including image enhancement, restoration, compression, segmentation, and color image processing. Includes Level 2 design projects. Prereq: 336. Non-majors require consent of instructor.

481 Power Electronics (3) Principles and characteristics of power semiconductor devices, single-phase and polyphase phase-controlled converters, converter control, ac voltage stabilizers. Includes Level 1 design projects and laboratory analysis, binary communication in the presence of noise, matched filtering and equalization, bandpass digital transmission, introduction to multiple access techniques. Includes Level 1 design projects which require laboratory work. Prereq: 481.

491 Special Topics (3) Topics relating to basic design and current practice. May not be repeated to satisfy senior requirements for graduation. Maximum three hours. Prereq: Completion of all junior Electrical Engineering courses or consent of instructor. Includes Level 1 or Level 2 design projects which may require laboratory work.

495 Senior Seminar (1) Current topics in electrical engineering. May not be repeated. Prereq: Completion of all junior Electrical Engineering courses or consent of instructor. Satisfactory/No Credit grading or letter grade.
ENG IN EERING FUNDAM ENALS (323)

100 Engineering Skills Development (1-3) Exercises in the skills and tools essential to the practice of engineering cannot be used toward any engineering degree. May be repeated. Satisfactory/No Credit grading only.

101 Engineering Approaches to Physical Phenomena (6) Engineering problem solving emphasizing graphical and mathematical modeling software. Introduction to design with team projects and presentations, coverage of professionalism and engineering perspective. Introduction to physical phenomena common to many engineering problems. These problems may include measurements and estimation, force, free-body diagrams, vectors, static equilibrium, Newton’s laws, and conservation laws. Coreq: Mathematics 130 or placement in Mathematics 141 or higher.


103 Review of Engineering Fundamentals (3) A review of statics and dynamics for students needing additional work after taking EF 102. Credit cannot be used towards any engineering degree. Satisfactory/No Credit grading only. Prereq: Consent of instructor.


201 Engineering Design Workshop (2) Introduction to the design process. Project experiences involving working in teams, oral presentations, and written reports. Prereq: Consent of instructor.

201 Engineering Career Planning and Placement (1) Fundamentals of seeking professional employment, including resume construction, interview preparation, contacting prospects, networking, business etiquette, and the entire job-seeking process. Intended for last-term juniors. Satisfactory/No Credit grading only.

300 Engineering Data Analysis and Process Improvement (3) Engineering statistical methods as applied to modern engineering and business environments, process improvement, inferences about process output and behavior, and measurement systems. An introduction to the use of designed experiments to improve process. Lab component emphasizes the use of teams to provide hands-on experiences, enhance learning, and develop skills in group dynamics. 2 hours lecture, 1 lab. Prereq: Statistics 251 or Mechanical Engineering 345 or consent of instructor.

301 Operations Research in Industrial Engineering I (3) Integrated system modeling concepts; linear mathematical programming models including the original simplex procedure, transportation and assignment problems, revised simplex procedure, dual simplex procedure, parametric linear programming (sensitivity analysis), and integer linear programming. Prereq: Mathematics 200.

304 Introduction to Human Factors Engineering (3) Human capabilities and limitations affecting human and work environment design. Emphasis on human factors methodology, human input requirements, human outputs, the design of human-machine interfaces, the analysis of stress on performance, environmental factors such as noise, lighting, and atmospheric conditions. Focus on designing the task to fit the person. Prereq: Junior standing and consent of instructor.

306 Simulation (3) Simulation of complex production processes using current simulation software. Introduction to modeling concepts, flowcharting, random number generation, design of experiments, simulation logic, and computer animation. Utilization of statistical tools to analyze inputs and outputs to simulation models. Lab component provides hands-on experiences in developing simulation models for relevant industrial engineering case studies. 2 hours lecture, 1 lab. Prereq: 202, 310.


403 Production Facilities Design and Material Handling (3) Design of production facilities including plant layout and analysis and planning for overall moving, packaging and storage of materials. This includes office layout and service areas. Principles applicable to design of facilities for such diverse groups as hospitals, banking, and industry. Prereq: 306.

404 Industrial Engineering Applications (2) To enhance and integrate the industrial engineering educational experience in preparing senior industrial engineering students for their transition to professional practice. Prereq: To be taken in student’s semester of graduation.


421 Information Systems Analysis and Design (3) Systems engineering approach to analysis, design, development, and implementation of systems of information. Emphasizes information requirements of industrial engineering systems. Involves utilization of relevant software packages. 2 hours lecture, 1 lab. Prereq: Senior standing or consent of instructor.

422 Senior Problems Analysis (3) Current real-world problems will be drawn from local production and service organizations and presented by personnel from these organizations. Senior Industrial Engineering student teams will solve these real-world problems under the guidance of their instructor using industrial engineering methodology. These problems emphasize problem definition, analysis, and presentation with considerations for engineering design, management, and economic factors. Prereq: College of Engineering or School of Industrial and Systems Engineering major, and MGE 404, 405.

440 Process Improvement Through Planned Experimentation (3) Review of experimental design, continuous improvement, advanced statistical techniques, and strategies for short production runs. Use of experimental design techniques to improve processes, including single and multiple-factor designs, blocking and confounding, and fractional designs. Full factorial designs are compared to fractional designs to balance experimental efficiency with loss of information. Lab component utilizes statistical and simulation software to provide hands-on experience. 2 hours lecture, 1 lab. Prereq: 300.

483 Introduction to Reliability Engineering (3) (Same as Nuclear Engineering 483).

484 Introduction to Maintenance Engineering (3) (Same as Nuclear Engineering 484.)

494-495 Special Topics in Industrial Engineering (1-3,1-3) Recent developments in Industrial Engineering including new areas of application, new research techniques and new methodologies. May be repeated once. Prereq: Senior standing and consent of instructor.

ENG IN EERING MATERIALS SCIENCE (638)

201 Introduction to Materials Science and Engineering (3) Correlation of atomic structure, crystal structure and microstructure of solids with mechanical, physical and chemical properties of engineering significance. Prereq: Chemistry 130.

220 Selection and Use of Soft Goods Manufacture (3) Study of textile products for apparel and interior furnishings; emphasis on the selection of fibers, yarns, fabrics, finishes and their application. Fabric construction, properties needed for successful design and production and service organizations and presented by personnel from these organizations. May be repeated once. Prereq: Senior standing or consent of instructor.

290-291 Materials Seminar (0,1) Professionalism, ethical considerations, safety, patents, product liability, field trips, industrial speakers, materials science in a global/societal context, teamwork, contemporary issues, life-long learning. May be repeated. Satisfactory/No Credit grading only. (Either 290 or 291 must be taken each semester by all Materials Science Engineering majors starting with the second year of residence.)

300 Materials Laboratory Procedures (1) Thermometry, sample preparation for microscopic examination; word processing and graphics usage, data analysis, report writing. Prereq: 201.

301 Materials Science and Engineering Data Analysis (3) (Same as Chemical Engineering 311).

302 Mechanical Behavior of Materials I (3) Tensile testing of metals, ceramics and polymers; deformation mechanisms in the various materials, including crystalline and non-crystalline forms; rubber elasticity, viscoelastic behavior, creep, time-temperature superposition in polymers. Fatigue. Prereq: 201, 303, or consent of instructor.


340 Principles of Polymeric Materials (3) Synthesis and molecular structure of polymers; polymerization kinetics; molecular characterization; crystalline and glass transitions; crystallization kinetics; mechanical properties; rheology and processing. Prereq: 201.

360 Principles of Ceramic Materials (3) Characterization of ceramic materials as to their crystal structure, their mechanical, electrical, and optical properties. Ceramic fabrication processes from the initial green body fabrication through the firing stage. Prereq: 201
370 Materials Processing (3) Application of fundamentals of mass and energy balances, mechanics, heat and mass transfer, chemical thermodynamics and kinetics to the processing of materials and manufacturing of products. A wide range of materials (metals, ceramics, polymers) and processes (bulk, fibers, films, coating) and processes (casting, molding, extrusion, forging, powder processing, coating techniques, etc.) are studied as examples of processing technologies. Elementary ideas of process measurement and control. Prereq. 201, 320, ChE 200, and ChE 240, or equivalent.


402 Principles of Metallic Materials (3) Property control through composition, mechanical and thermal processing; ferrous and nonferrous alloys; alloy selection. Prereq. 201.

405 Structural Characterization of Materials (4) X-ray diffraction and fluorescence; scanning and transmission electron microscopy; microanalytical techniques.


421 Mechanical Behavior of Materials II (3) Description of stress and strain; linear elastic constitutive equations, isotropic and anisotropic models in various materials; yield criteria; brittle fracture, crazing; plastic strain constitutive equations, forming operations and limit criteria. Prereq. 302, Engineering Science 321, sophomore mathematics.

429 Introduction to Ceramic Matrix Composites (3) Characteristics of composites, including ceramic matrix composites; macromechanics and materials design; overview of fabrication techniques; microstructural characterization; physical and mechanical property evaluation, current and potential applications. Prereq. 201 and ES 321, or equivalent.

443 Polymer Processing (3) Rheological measurements; flow through tubes and slits; including end effects and extrudate swell; selected applications, including screw extrusion, injection molding, synthetic fibers, including structure development, properties.

444 Plastics Fabrication and Design (3) Lectures, laboratories and field trips; unit operations of plastics fabrication; plastics classification; design and selection criteria; processing techniques; characterization laboratory.

470 Environmental Degradation of Materials (3) Mechanisms, measurement techniques and control of environmental degradation processes in metals, polymers, ceramics and composites; materials selection and design considerations. Prereq. 201. Recommended for chemistry, mechanical engineering, civil engineering and engineering science and mechanics majors.

472 Fundamental Principles of Composite Materials (3) Physical principles basic to the design, manufacture and application of fiber reinforced polymers, metals and ceramics. Prereq. 302 or equivalent.

474 Biomaterials (3) Metals, polymers and ceramics utilized in orthopedic, cardiovascular, and dental surgical implant devices; corrosion and degradation problems; material properties of primary importance; tissue response to synthetic materials. Prereq. 201. Recommended for engineering science and mechanics majors.

484 Introduction to Maintenance Engineering (3) (Same as Nuclear Engineering 484.)


494 Special Project Laboratory (1-3) Group or individual investigation of problems related to materials science and engineering. May be repeated to a maximum of 6 credits. Prereq. 201 and consent of instructor.

495 Thesis (3) Research problems in materials science and engineering with prior approval of a professor. May be repeated once. Prereq. Senior standing or consent of professor.

ENGIN EERING MECHANICAL(650)

231 Dynamics (3) Kinematics of rigid bodies; center of mass; kinetics of systems of particles; mass moments of inertia; kinetics of rigid bodies; Newton’s laws, work-energy, impulse-momentum. Prereq. Engineering Fundamentals 102, Mathematics 142.


332 Thermodynamics II (3) Properties of gases and mixtures; chemical reactions; equilibrium; compressible flow; applications to engineering problems. Prereq. 331. 344 Heat Transfer (3) Heat transfer by conduction, thermal radiation, free and forced convection. Prereq. 331, 391, Aerospace Engineering 341.

345 Mechanical Engineering Instrumentation and Measurement (3) Fundamentals of measurement systems; standards, dynamic characteristics of instruments; statistical data; treatment; transducers; signal conditioning; strain, pressure, temperature and flow measurements. Coreq. 363; Prereq. Aerospace Engineering 341, Electrical and Computer Engineering 301.

363 Mechanical Vibration (3) Free and forced vibrations of damped and undamped lumped parameter systems; energy methods; free vibration of continuous bodies. Prereq. 231, Mathematics 231.


401 Thesis (3) Research and design problems in mechanical engineering with prior approval of instructor. Prereq. Senior standing or consent of instructor.


431 Seminar (1) Topics related to engineering including ethics. Formal oral presentation by students on engineering topics. Prereq. Senior standing.

449 Mechanical Engineering Laboratory (3) Designing, conducting and reporting results of experimental exercises. Test standards and specifications. Analysis of data and formation of conclusions. 3 hours per week. Prereq. 332, 344, 345. Coreq. 475.

451 Systems and Controls (3) Analytical models of physical systems; comprised of fundamental control elements, and thermal systems. Analysis and design of feedback control systems using transient and frequency response techniques, stability analysis, sampled data systems. Prereq. 345, Electrical and Computer Engineering 301.

452 Computational Mechanics (3) Integration of fundamental physical laws, mathematical methods, and computational techniques necessary to develop engineering analysis and design capabilities. Finite element method. Prereq. 321, Aerospace Engineering 341.

455 Introduction to Machine Design (2) Engineering economy, optimization, design for automation, reliability, patents and product liability; design of mechanical engineering solid mechanics systems. Participation in team design effort; requires design report. Prereq. 363.

456 Introduction to Thermal Design (2) Engineering economy, optimization, design for automation, reliability, patents and product liability; design of mechanical engineering thermal-fluid systems. Participation in team design effort; requires design report. Prereq. 363.

466 Elements of Machine Design II (3) Application of strength and properties of materials, design factors, theories of failure to design of machine elements. Mini design experiences. Prereq. 321, Materials Science Engineering 201.

469 Machine Design (4) Design of complete machine; documentation including complete specifications, design calculations, working drawings, and cost analysis. Written and oral report. Prereq. 366, 455, 466.

471 Refrigeration and Air Conditioning (3) Vapor compression and absorption cycles; heat pump systems; psychrometric processes; air washers; cooling towers; solar radiation; building heat transmission. Prereq. 332, 344.

475 Thermal Engineering (3) Thermal systems with emphasis on turbomachinery, heat exchangers, combustion and system analysis and design including second law and economic performance. Prereq. 332, 344.

479 Thermal Engineering Design (4) Design of a complete thermal-fluid system including economic, technical and optimization aspects. Participation in team design effort including formal presentations and design report. Prereq. 456, 475.

483 Introduction to Reliability Engineering (3) (Same as Nuclear Engineering 483.)

484 Introduction to Maintenance Engineering (3) (Same as Nuclear Engineering 484.)

494-495 Selected Topics in Mechanical Engineering (1-4,1-4) Problems and topics related to developments and practice in mechanical engineering. Prereq. Consent of instructor.

ENGIN EERING NUCLEAR(716)

200 Introduction to Nuclear and Radiological Engineering (1) Topics related to nuclear and radiological engineering. Satisfactory/No Credit grading only.


304 Nuclear and Radiological Engineering Laboratory (1) Radiation detection and counting instrumentation, counting statistics, half-life and decay schemes, gamma spectrometry, heat transfer experiments. Prereq. 342. Coreq. 470.

365 Energy Transport (3) Development of differential and integral energy conservation; conduction and convection heat transfer including numerical methods; application to nuclear reactor fuel elements, reactor cores, and heat exchangers. Prereq. 203.
432 Thermal Science (3) Fluid statics; conservation equations of mass, momentum, and energy; applications to fluid machinery; heat transfer processes, heat conduction, thermal radiation, free and forced convection. Prereq: 203 or Mechanical Engineering 331.


360 Reactor Systems and Safety (3) Safety and operating limits of nuclear steam supply system components; NRC regulations; accident analysis and mitigation. Prereq: 342.

400 Senior Seminar (1) Current topics related to nuclear and radiological engineering including ethics, contemporary issues, and commitment to life-long learning. Prereq: Senior standing. Satisfactory/No Credit grading only.

403 Nuclear and Radiological Engineering Laboratory II (3) Crosssection measurements, diffusion properties of neutrons, shielding, dynamics and controls, alpha and beta spectroscopy, radiation fields and dosimetry. Prereq: 304.

404 Nuclear Fuel Cycle (3) Topics relative to nuclear fuel cycle including, mining, milling, fabrication, in-core management, reprocessing, waste disposal, regulatory and radiation health issues and requirements. Prereq: 470 or equivalent.

406 Radiation Shielding (3) Types of radiation sources, fundamentals of gamma ray and neutron attenuation, biological effects, approximate methods of shield design, discrete ordinates, and Monte Carlo. Prereq: Physics 232.

421 Introduction to Nuclear Criticality Safety (3) Fundamentals of nuclear criticality safety; criticality accidents: safety standards; overview of experiments, computational methods, and applications. Prereq: 301.

431 Radiation Protection (3) External and internal dosimetry, biological effects of radiation, radiation detection, radiation risk assessment. Prereq: 301.

432 Radiation Risk Analysis (3) Radiation risk estimates for external and internal radiation, dose-response models, dose rate effects, prediction of radiation risks, radiation safety standards.

470 Nuclear Reactor Theory I (3) Fundamentals of reactor physics relative to cross sections, kinematics of elastic scattering, reactor kinetics, reactor systems and nuclear data. Analytical and numerical methods applicable to general criticality problems, eigenvalue searches, perturbation theory, and the multigroup diffusion equations. Prereq: 301.

471 Nuclear Reactor Theory II (3) Thermal spectrum computational methods: heterogeneous effects in fast and thermal spectra; considerations in reactor core design; equations that relate thermal and neutron variables; power distribution calculations and reactivity control methods. Prereq: 470.

472 Nuclear System Design (4) First order design and analysis of a nuclear system, interface with nonnuclear aspects of system design including system reliability and economics, class project. Prereq: 470.

483 Introduction to Reliability Engineering (3) Probabilistic failure models, parameter estimation (maximum likelihood, Bayes techniques), Model identification and comparison, accelerated life tests, failure prediction, system reliability, preventive maintenance and warranties. Prereq: Senior standing or consent of instructor. (Same as Mechanical Engineering 483 and Industrial Engineering 483.)

484 Introduction to Maintenance Engineering (3) Principles of maintenance and reliability engineering, and maintenance management. Topics include information extraction from machinery measurements, rotating machinery diagnostics, nondestructive testing, life prediction, failure models, lubrication oil analysis, establishing a predictive maintenance program, and computerized maintenance management systems. Prereq: Senior standing in engineering and consent of instructor. (Same as Materials Science and Engineering 484, Industrial Engineering 484, and Mechanical Engineering 484.)

494 Special Topics in Nuclear Engineering (3) Problems related to recent developments and practice. Prereq: Senior standing or consent of instructor. May be repeated.

495 Special Topics in Radiological Engineering (3) Problems related to recent developments and practice. May be repeated. Prereq: Senior standing on consent of instructor.

498 Research (1-5) Research related to recent developments in nuclear and radiological engineering. May be repeated up to a maximum of 3 credits. Prereq: Consent of department head. Satisfactory/No Credit grading only.

103 Writing Workshop I (1) Self-paced Writing Center tutorial for students wanting additional instruction while enrolled in English 101 or having ACT English and composite scores at or below 18 (or SAT verbal/composite scores at or below 450/850). Individual instruction in mechanics, paragraph development and essay structure. To receive credit, a student must participate at least two hours per week and must also pass the 101 class in which he or she is currently enrolled Satisfactory/No Credit grading only.

104 Writing Workshop II (1) Self-paced Writing Center tutorial for students wanting additional instruction while enrolled in English 102 or students advised to enroll by their 102 instructors. Prereq: English 102. Individual instruction in critical reading and in developing and documenting the research paper. To receive credit, students must participate at least two hours per week and must also pass the 102 class in which they are currently enrolled. Prereq: 101. Satisfactory/No Credit grading only.

118 Honors English Composition (3) For students whose ACT English and Composite scores are at or above 28 (or SAT verbal/composite scores at or above 650/1250). Grading scale and workload are same as in regular sequence though course proceeds at an accelerated pace. Practice in argumentation, critical reading, literary interpretation, and research methods. May include the study of a long work of literature in addition to readings in nonfiction, short fiction, poetry, and drama. Students receiving a grade below B in 118 will complete a year's work in English Composition by taking 102. Students receiving a grade of A or B will complete their freshman English requirements by choosing 102, a sophomore literature course in the English Department, or 355. A, B, C, No Credit grading.

121 Academic English for Non-Native Speakers (4) Development of English academic literacy, including reading, writing, vocabulary, and grammar as well as some attention to listening, oral presentation, and pronunciation. Required of all non-native English-speaking students who demonstrate on the English Placement Examination a need for work in English structures, reading, or writing. Admission to this course is by the English Placement Exam only. Meets four hours a week. A, B, C, F grading.

131 Composition for Non-Native Speakers of English I (3) Paragraph and composition organization and development with emphasis on informative and persuasive writing. Includes grammar and mechanics. Individual conferences. Admission to this course is by the English Placement Exam only. A, B, C, No Credit grading.

132 Composition for Non-Native Speakers of English II (3) Writing based on reading and discussion. Analysis of works of literature. Emphasis on research techniques and writing research papers. Individual conferences. Admission to this course by the English Placement Exam only. A, B, C, No Credit grading.

201 British Literature I: Beowulf through Johnson (3) Major literary works from three periods: Middle Ages, Renaissance, and Restoration and Eighteenth Century. Writing-emphasis course.


207 Honors British Literature I (3) Enriched section of 201 designed for students with a 3.25 or higher GPA.

208 Honors British Literature II (3) Enriched section of 202 designed for students with a 3.25 or higher GPA.

221 Literature of the Western World I: Ancient, Medieval, and Renaissance (3) Writing-emphasis course.

222 Literature of the Western World II: Enlightenment, Romantic, and Modern (3) Writing-emphasis course.

231 American Literature I: Colonial Era to the Civil War (3) Development of American literature from its beginnings to the Civil War. Writing-emphasis course.

232 American Literature II: Civil War to the Present (3) Development of American literature from Civil War to the present. Writing-emphasis course.

233 Major Black Writers (3) Black American literature as a literary tradition. Writing-emphasis course. Prereq: English 221. (Same as African and African-American Studies 233.)

237 Honors American Literature I: Colonial Era to the Civil War (3) Enriched section of 231 designed for students with a 3.25 or higher GPA.

238 Honors American Literature II: Civil War to the Present (3) Enriched section of 232 designed for students with a 3.25 or higher GPA.

251 Introduction to Poetry (3) Poetry as a distinct mode of artistic expression. Critical tools for perceptive reading of poems. Writing-emphasis course.

252 Introduction to Drama (3) Critical tools for perceptive reading of plays. Writing-emphasis course.

253 Introduction to Fiction (3) Fiction from the eighteenth through the twentieth centuries, emphasis on the novel. Critical tools necessary for judging varieties of fiction. Writing-emphasis course.

254 Themes in Literature (3) Study of important themes in English, American, and World literatures. Some sample themes are religion, crime, law, ecology, science, exploration, revolution, colonization initiation, education, Multi-genre focus. Writing-emphasis course. See Timetable for topic.

256 Public Writing (3) Rhetorical strategies for effective communication about public issues. Students will learn to write in multiple modes and will participate in collaborative writing projects with business, academic, or political organizations.

263 Introduction to Creative Writing (3) Practice in writing poetry and fiction, combined with study of models and techniques. Writing-emphasis course.

281 Introduction to Film Studies (3) Selected world cinema feature films. Critical techniques necessary for understanding and analysis of narrative cinema. Basic elements of film expression and contours of film history. Writing assignments. (Same as Cinema Studies 281.)

295 Business and Technical Writing (3) Principles of written communication in science and business.
301 British Culture to 1660 (3) English literature in the context of parallel developments in art, architecture, music, and social and intellectual history. Writing-emphasis course.

302 British Culture: 1660 to present (3) English literature in the context of parallel developments in art, architecture, music, and social and intellectual history. Writing-emphasis course.

306 Introduction to Shakespeare (3) May not be used by English majors to fulfill the pre-1800 literature course requirement.

331 Race and Ethnicity in American Literature (3) Examines the role of ethnic and racial identity in the literature of the United States. (Same as African and African-American Studies 331.)

332 Women in American Literature (3) Women as writers and as subjects in American literature from its beginnings to the present. (Same as Women’s Studies 332.) Writing-emphasis course.

333 Black American Literature and Aesthetics (3) Black American literature and aesthetics since 1899, with emphasis on cultural evaluations and the principles of being “American.” (Same as African and African-American Studies 333.) Writing-emphasis course.

334 Film and American Culture (3) American films as both works of art and social documents. Relationship between the medium of film and American culture in the twentieth century. (Same as American Studies 334 and Cinema Studies 334.) Writing-emphasis course.

351 The Short Story (3) Emphasis on 20th century: American, British, and International. 355

355 Rhetoric and Writing (3) Strategies of writing on personal and academic subjects. Discussion of student and professional writing. Open to sophomores with instructor’s consent.

360 Technical and Professional Writing (3) For students who need to sharpen their technical communication skills. Writing of definitions, process descriptions, proposals, abstracts, executive summaries, and major reports. Prereq: Junior standing in student’s major or consent of instructor.

363 Writing Poetry (3) Introduction to writing poetry.

364 Writing Fiction (3) Introduction to writing novels and short stories.

365 Writing Drama and the Screenplay (3) Introduction to writing one-act and full-length plays, as well as screenplays.

371 Foundations of the English Language (3) Phonology, morphology, and syntax of English. History of the English language to 1800. (Same as Linguistics 371.)

372 The Structure of Modern English (3) Survey of approaches—traditional, descriptive, and generative-transformational—to the structure of modern English. (Same as Linguistics 372.)

376 Colloquium in Literature (3) Methods and objectives of literary study; conferences to plan student’s program in major. Prereq: Sophomore literature package or consent of instructor.

381 Introduction to Folklore (3) Essential terms and concepts in modern folklore-folk-life studies. Emphasis on North American materials: folktales, folk songs, myth, legend, proverbs, riddles, superstitions, dance, games, and architecture. (Same as American Studies 381.)

389 Literature of the English Bible (3) Types of literature in the Bible: legend, folktale, history, biography, poetry, prophecy, apocalyptic. (Same as Religious Studies 389.)

398 Junior-Senior Honors Seminar (3) Seminar for students admitted to English honors program. Variable content determined by instructor, but usually focused on a particular literary period, genre, or issue. Enrollment limited to 15. See Director of Undergraduate Studies in English for details.

401 Medieval Literature (3) Reading and analysis of selected medieval literary masterpieces in modern English. Writing-emphasis course. (Same as Medieval Studies 401.)

402 Chaucer (3) Reading and analysis of the Canterbury Tales and Troilus and Criseyde in Middle English. (Same as Medieval Studies 402.)

404 Shakespeare I: Early Plays (3) Shakespeare’s dramatic achievement before 1601. Selected plays from the romantic comedies (e.g., Twelfth Night), the English histories (e.g., 1 Henry IV) and early tragedy (e.g., Hamlet).

405 Shakespeare II: Later Plays (3) Shakespeare’s dramatic achievement between 1601 and 1613. Selected plays from the great tragedies (e.g. Othello), the problem plays (e.g. Measure for Measure), and the dramatic romances (e.g., The Tempest).

406 Renaissance Drama (3) English theatre between 1590 and 1640. Representative plays by Shakespeare’s contemporaries (e.g., Marlowe, Webster, Jonson).

409 Spenser and his Contemporaries (3) Principal achievements in prose and poetry of sixteenth-century authors such as Spenser, Wyatt, Marlowe, More, Sidney and Bacon.

410 Milton, Donne and their Contemporaries (3) Principal achievements in prose and poetry of the first two-thirds of the seventeenth century (such as the poetry of Milton, Donne, Marvell; and the prose of Browne, Bacon, Walton).

411 Literature of the Restoration and Early Eighteenth Century: Dryden to Pope (3) Survey of English literature and culture from 1660 to 1745.

412 Literature of the Later Eighteenth Century: Johnson to Burns (3) Survey of English literature and culture from 1745 to 1800.

413 Restoration and Eighteenth-Century Genres and Modes (3) Study of one major genre or literary mode such as drama, novel, poetry, fiction, prose, satire, romance, or epic written between 1660 and 1800. May be repeated for credit.

414 Romantic Poetry and Prose I (3) Emphasis on Wordsworth, Coleridge, and Blake, with readings from Lamb, De Quincey, and other prose writers.

415 Romantic Poetry and Prose II (3) Emphasis on Keats, Shelley and Byron, with readings from Hazlitt, Peacock, and other prose writers.

416 Early Victorian Literature (3) May include poetry by Tennyson and the Brownings; prose by Carlyle, Newman, and Mill.

419 Later Victorian Literature (3) May include poetry by the Pre-Raphaelites, Arnold, Hopkins, and Hardy; prose by Arnold, Ruskin, and Carroll; plays by Gilbert and Wilde.

420 The Nineteenth-Century British Novel (3) Major novelists from Scott to Hardy.

421 Modern British Novel (3) Authors such as Joyce and Woolf through contemporary British fiction writers.

422 Writers in Britain (3) Emphasis on the literary consciousness and work of women writers in Britain. Course content will vary. Authors covered may include Jane Austen, Charlotte Bronte, George Eliot, Virginia Woolf, and Doris Lessing. May be repeated. Maximum 6 hours. (Same as Women’s Studies 422.)

431 Early American Literature (3) From the earliest texts to 1830, including exploration and discovery, Native American, colonial, revolutionary, and early national works.

432 American Romanticism and Transcendentalism (3) Prose and poetry of the American Renaissance, from c. 1830 to the end of the Civil War. Includes writers such as Cooper, Poe, Hawthorne, Melville, Emerson, Thoreau, Stowe, Douglass, Whitman, and James.

433 American Realism and Naturalism (3) Literature from the time of the Civil War to World War I, including such writers as Twain, Howells, James, Jewett, Freeman, Crane, and Norris.

434 Modern American Literature (3) World War I to the present.

435 American Novel Before 1900 (3) From earliest sentimental novels through Brown and Cooper, and major figures to 1900, including Hawthorne, Melville, Stowe, Clemens, and James.

436 Modern American Novel (3) Authors such as Faulkner, Steinbeck, Wolfe.

441 Southern Literature (3) Southern writing from colonial period into the twentieth century, including frontier humorists, local color writers, and southern literary renaissance.

442 American Humor (3) Development of American humor from the early nineteenth century into the twentieth century, with particular emphasis on Mark Twain. (Same as American Studies 442.)

443 Topics in Black Literature (3) Contents vary according to particular genres, authors, or themes from 1845 to the present, including Langston Hughes and the Harlem Renaissance, Richard Wright and Gwendolyn Brooks, writing by Black women, international Black literature in English, and Black American autobiography. (Same as African and African-American Studies 443.)

451 Modern British and American Poetry (3) From Yeats and Frost to Auden, Stevens, and more recent poets.

452 Modern Drama, 1880-1945 (3) Survey of British, American, and international drama from the advent of modern drama to the end of World War II. (Same as Comparative Literature 452.)

453 Contemporary Drama (3) Survey of British, American, and international drama since World War II.

454 Twentieth-Century International Novel (3) Fiction in English translation from such writers as Kafka and Camus through contemporary authors. (Same as Comparative Literature 454.)

455 Persuasive Writing (3) Focuses on writing and analyzing persuasive texts in public, private, and academic contexts. Prereq: 355 or consent of instructor.

456 Contemporary/Postmodern Literature (3) Studies in literature written after World War II. Contents will vary. May be repeated once with permission of instructor.

460 Technical Editing (3) Editing technical material for publication. Principles of style, format, graphics, layout, and production management. Prereq: 360 or consent of instructor.

462 Writing for Publication (3) Principles and practices of writing for publication. Dissertations, theses, articles, and reports in science and technology. Prereq: 360 or consent of instructor.

463 Advanced Poetry Writing (3) Development of skills acquired in basic Writing Poetry course. Prereq: 363 or consent of instructor.

464 Advanced Fiction Writing (3) Development of skills acquired in basic Writing Fiction course. Prereq: 364 or consent of instructor.

466 Writing, Layout, and Production of Technical Documents (3) Editing technical material for publication. Principles of style, format, graphics, layout, and production management. Prereq: 360 or consent of instructor.

470 Special Topics in Rhetoric (3) Topics vary. May be repeated with consent of department. Maximum 6 hours. Prereq: 355 or consent of instructor.

471 Sociolinguistics (3) Language in relation to society. Empirical and theoretical focus. Emphasis on large-scale units: tribes, nations, social groups. Prereq: 371 or 372 or Linguistics 200 or consent of instructor. (Same as Linguistics 471 and Sociology 471.)

472 American English (3) Phonological, morphological, and syntactic characteristics of major social and regional varieties of American English, with attention to their origins, functions, and implications for cultural pluralism. Prereq: 371 or 372 or Linguistics 200 or consent of instructor. (Same as Linguistics 472.)

474 Teaching English as a Second or Foreign Language I (3) Introduces major issues surrounding teaching ESL/EFL, including political implications of teaching ESL/EFL; introduction to second language acquisition; learner variables in language learning; traditional and innovative approaches to ESL/EFL; basic features of American English grammar necessary for teaching ESL. Prereq: Second year of a foreign language or consent of instructor. (Same as Linguistics 474.)
475 Teaching English as a Second or Foreign Language II (3) Covers issues, principles, and techniques in teaching grammar, speaking, pronunciation, reading, and writing in ESL/EFL. Includes observations and teaching practice in ESL classes and development of ESL materials and tests. Prereq: 474. Same as Linguistics 475.

476 Second Language Acquisition (3) How humans learn second languages. Examines theoretical models and research on such issues as differences between first and second language acquisition; the effect of age; cognitive factors in second language acquisition; learner variables; second language factors; and implications for second/foreign language instruction. (Same as Linguistics 476.)

477 Pedagogical Grammar for ESL Teachers (3) Aspects of English syntax and morphology presenting difficulties for non-native learners of English. Basic and complex sentence structures; the noun and article system; and verb tense, aspect, modality, and complementation. (Same as Linguistics 477.)

479 Literary Criticism (3) Historical survey of major works of literary criticism.

480 Fairy Tale, Legend, and Myth: Folk Narrative (3) Study of forms of folk narrative: normally includes Grimm's, Andersen's, Irish, English, Appalachian, African, and Native American tales.

481 Studies in Folklore (3) Topic varies. May be repeated with different topic. Maximum 6 hours.

482 Major Authors (3) Content varies. Concentrated study of at least one of the most influential writers in British or American literary history: e.g., Donne, Pope, Austen, Tennyson, Whitman, Faulkner, Lawrence, Baldwin, or Morrison. May be repeated. Maximum 6 hours.

483 Special Topics in Literature (3) Topics vary. May be repeated. Maximum 6 hours.

484 Special Topics in Writing (3) Original writing integrated with reading, usually taught by a professional author. Topics vary. May be repeated. Maximum 6 hours.

485 Special Topics in Language (3) May be repeated. Maximum 6 hours with consent. (Same as Linguistics 485.)

486 Special Topics in Criticism (3) Content varies. Special topics in theoretical and practical approaches to British and American literature. May be repeated with consent of department. Maximum 6 hours.

489 Special Topics in Film (3) Content varies. Special directors, film genres, national cinema movements, or other topics. May be repeated with consent of department. Maximum 6 hours. (Same as Cinema Studies 489.)

490 Language and Law (3) Language in the Anglo-American legal process: focus on differences between spoken and written language, lexical and syntactic ambiguity, pragmatics; speech act analysis; and the language rights of linguistic minorities. Prereq: 371 or 372 or consent of instructor. (Same as Legal Studies 490 and Linguistics 490.)

491 Foreign Study (1-15) See Mapping, studying, and writing about drama as performed in London and Stratford-upon-Avon during the summer.

492 Off-Campus Study (1-15) See Mapping, studying, and writing about drama as performed in New York City.

493 Independent Study (1-6) Tutorial in subjects not adequately covered in regular courses. May be repeated for a total of 6 hours credit.

495 Introduction to Rhetoric and Composition (3) Introduction to the historical, theoretical, and empirical modes of inquiry in rhetoric and composition and their implications for the teaching of composition. Prereq: 355 or consent of instructor.

496 The Rhetoric of Legal Discourse (3) Applying basic principles of persuasive writing to legal materials. Writing position papers, briefs, and memoranda, students learn how to argue in the context of legal discourse. Prereq: 474. Same as Linguistics 475.

497 Senior Honors Thesis (3) Second semester of English honors program. Working individually, the student produces a substantial critical or creative project under the direction of two members of the professional staff. Prereq: 398.

499 Senior Seminar (3) Intensive study in an author, period, genre, or of problems in literature. May be repeated. Maximum 6 hours.

ENGLISH EDUCATION (340)

141 Efficient Reading and Study Skills (2) Improvement of reading comprehension and rate, intensive vocabulary enrichment, study skills as they relate to content area subjects. Satisfactory/No Credit grading only.

456 Teaching Speech and Drama, Grades 7-12 (3) Purposes, techniques, materials and evaluation for teaching Speech and Drama in secondary schools. Required for certification in Speech. Prereq: Admission to Teacher Education Program.

459 Teaching English in the Secondary School (3) Techniques of teaching composition, language, and literature. Prereq: Admission to Teacher Education Program.

460 Teaching Reading and Literature in the Secondary School (3) Teaching basic reading skills and literature.

ENTOMOLOGY AND PLANT PATHOLOGY (341)

201 Impact of Insects and Plant Diseases on Human Societies (3) Insects and plant diseases have had a significant influence on human history, culture, and lifestyles. The science of entomology and plant pathology help humankind understand the impact of insects and plant pathogens on these dimensions of human existence. The development of strategies to capitalize on the beneficial effects of these organisms will also be explored. 3 hours.

306 Forest Protection (3) Biological, economic and legal consideration of fire, pathogens, insects, vertebrates, wind, and pollutants in the forest ecosystem. One or more all day or overnight field trips may be required. Prereq: FWF 311, or consent of instructors. 2 hours and 1 lab. (Same as Forestry 306.)

313 Plant Pathology (3) Introduction to the microorganisms and environmental conditions causing disease in plants. Biology of pathogens, Host-pathogen interactions, disease development and principles of control. Prereq: Six hours of Biological Science. 2 hours and 1 lab. (Same as Botany 313.)

321 Economic Entomology (3) Structure, life history, habits and principles of control of important insect pests of farm, garden, orchard and household. Prereq: Six hours of Biological Science. 2 hours and 1 lab.

325 Veterinary Entomology (3) Identification, biology and control of arthropods that attack major livestock species. Introduction to entomology, methods of insect control, major pest species groups and problems associated with specific host production operations. Prereq: Biology 122 or equivalent. 2 hours and 1 lab.

410 Diseases and Insects of Ornamental Plants (3) Symptoms, identification and management of diseases and insect pests that affect plants in greenhouse, nursery, and landscape environments. Prereq: 313 or 321 (or consent of the instructor). 4 hours.

ENVIROMENTAL AND SOIL SCIENCES (345)

110 Introduction to Environmental and Soil Sciences (1) Invited speakers on current topics; career opportunities in the environmental sciences; field trip with departmental sponsoring. Satisfactory/No Credit grading only.

210 Introduction to Soil Science (4) Differences in soils; soil genesis; physical, chemical, and biological properties of soil; relation of soil to land use and pollution; soil management relative to tillage, erosion, moisture supply, temperature, aeration, fertility and plant nutrition. Prereq: One semester of chemistry. 3 hours lecture and one 2-hour lab.

242 Soil Morphology (1) Intensive course involving describing, classifying and interpreting soils in preparation for regional and national soil judging contests. Prereq: Consent of instructor. May be repeated. Maximum 4 hours. 1 hour and 1 lab.

301 Professional Development (1) Techniques of effective professional communications; professional ethics; interviewing and the job search. Prereq: Junior standing.

324 Soil and Water Conservation (3) Investigation of hydrologic principles regarding soil and water conservation. Topics include: hydrologic cycle, water quality, soil properties, erosion prediction and control, and techniques to protect natural resources. Prereq: 210. 2 hours lecture and one 2-hour lab.

334 Soil Nutrient Management and Fertilizers (3) Influence of soil properties on nutrient availability to plants. Management of inorganic and organic fertilizer materials and the determination of their fate in the soil-plant system. Nutrition management as it relates to agricultural sustainability and soil quality. Prereq: 210. 2 hours and 1 lab.

355 Environmental Soil Biology (3) Biology and biochemistry of the soil environment as it applies to environmental and agricultural processes. Topics include microbial ecology, biogeochemical cycling of soil elements, soil quality and bioremediation. Prereq: 210 and Microbiology 210.

434 Environmental Soil Chemistry (3) Composition and chemical properties of soils and processes that govern fate and behavior of chemicals in the soil environment. Topics include: soil chemistry; soil organic matter; mineral weathering; stability; aqueous speciation; surface chemistry; ion exchange, adsorption, and molecular retention; oxidation-reduction; and soil acidity, alkalinity, and salinity. Prereq: 210 and Chemistry 110 or 350.

442 Soil Genesis and Classification (3) Soil genesis and formation; observing and describing morphology of agricultural and forest soils; chemical and physical properties. Prerequisites: 2 semester field trips to the field at the beginning of the semester. Prereq: 210, 2 hours and 1 lab.

444 Transport Processes in Soil (3) Basic understanding of soil physical properties and processes; influence of soil physical properties on water and chemical movement in soil; practical experience in the measurement and analysis of soil physical properties, water flow, and chemical movement in soil. Prereq: 210 and Physics 221 or equivalent.

462 Environmental Climatology (3) Study of atmosphere as environment. Physical, chemical and biological factors affecting climates of various world environments; meteorological process affecting biosystems. Climatic change and the human impact on the atmosphere, consequences of climatic change and mitigation policies, microclimates and urban climates, atmospheric pollution, extreme events and ozone depletion. Design and operation of weather information systems; automated weather stations. Prereq: Agriculture and Natural Resources 290 or equivalent.

481 Capstone in Environmental and Soil Sciences (3) Integrative course in which students work individually and collaboratively to develop solutions for soil and water related environmental problems. Writing and oral communication emphasis course. Prereq: 434 and senior standing.

492 Internship (1-6) Supervised experience with a departmentally-approved employer. Student is responsible for making arrangements. Requirements include maintaining a daily log, supervisor evaluations, and a final report. May be repeated with a maximum of 6 hours credit. Prereq: Junior standing. Satisfactory/No Credit grading only.

493 Problems in Environmental and Soil Sciences (1-3) Special research problems in environmental sciences. May be repeated. Maximum 6 hours. Prereq: Approval of Department and Junior Standing.

EXERCISE SCIENCE (347)

100 Orientation to Exercise Science (1) Overview of discipline and professional areas for incoming Exercise Science majors. Must be taken prior to admission to the Exercise Science major.
260 Exercise Science Practicum (1) First practicum experience to support and clarify career goals. Satisfactory/No Credit grading only. Prereq: 100.

276 Fitness for Life (2) Evaluation and discussion of factors related to optimal health. Cardiorespiratory function, muscular strength and endurance, flexibility, low back function, nutrition, and stress. Emphasis on evaluation of current status with recommendations for change toward reasonable health-related goals.

322 Exercise Leadership (2) Methods of instructing and leading fitness activities, including jogging, exercise to music, water activities, and fitness games. 1 hour lecture; 3 hour lab. Prereq: At least junior standing and progression to the major.

325 Athletic Training Techniques (5) Prevention of athletic injuries through sound conditioning programs and practices; recognition and immediate treatment of injuries. Prereq: 332 and progression to the Exercise Science major or consent of instructor.

332 Applied Anatomy (3) Structure and roles of bones, joints and muscles in human movement and exercise; related biomechanical principles. Prereq: Junior standing.

350 Disease and Injury: Epidemiologic and Demographic Perspectives (3) Disease and injury mortality and morbidity patterns, trends, differentials and causes are examined from perspectives of population-based sciences of epidemiology and demography. Completion of college course in statistics or mathematics is recommended.

380 Special Topics (1-3) Study in selected disciplinary or professional areas of Exercise Science. May be repeated. Maximum of 6 hours. Prereq: Progression to the major.

411 Physical Activity for Special Populations (3) Nature of various disabilities and implications for physical activity programming. Course requirements include out-of-class practicum working with individuals who have disabilities. Prereq: ES 332 Applied Anatomy or consent of instructor, Exercise Science majors, minimum cumulative 2.5 GPA.

414 Fitness Testing and Exercise Prescription (3) Relationship of exercise to cardiorespiratory function, body composition, strength and flexibility. Measurement and evaluation of fitness in normal populations. Prereq: Biochemistry and Cellular and Molecular Biology 230; Exercise Science majors, minimum cumulative 2.5 GPA.


426 Exercise Science Practicum II (1-6) Supervised experience in exercise/fitness areas. May be repeated for a maximum of 10 hours. Prereq: Progression to the major and consent of instructor. Satisfactory/No Credit grading only.

480 Physiology of Exercise (3) Lecture and class dealing with functions of the body in muscular work. Topics include physiological aspects of fatigue, training, and adaptations to environment. 2 lectures and 1 lab. Prereq: Biochemistry and Cellular and Molecular Biology 230 or 440. (Same as Biochemistry and Cellular and Molecular Biology 480). Exercise Science majors, minimum cumulative 2.5 GPA.

490 Exercise Physiology/fitness Internship (12-15) Full-time practicum in exercise fitness at approved agency. Satisfactory/No Credit grading only. Prereq: 414, 442, 426, 480, progression to major, and consent of instructor.

493 Directed Independent Studies (1-3) Independent study in a specialized area with Exercise Science. May be repeated. Maximum 9 hours. Prereq: Consent of advisor and progress to major.

497 Honors Research Project (3-6) Senior research project done under supervision of a faculty member. Includes design of research project, writing proposal for institutional review board approval, data collection and analysis, and presentation of results. Project should be approved with two semesters of study remaining. Prereq: Senior standing.

FINANCE (349)

201 Personal Finance (3) Financial planning, investing, managing assets, insurance, and retirement planning for nonbusiness majors. May not be used to satisfy Finance elective requirements. Offered as faculty resources allow.

280 Introduction to Real Estate (3) This course is designed to provide a detailed survey of the real estate market and its analysis. In particular, the course focuses on developing an understanding of the unique legal, institutional, and economic environment of the real estate market. In addition, the basics of real estate financing, and investment analysis will be considered. This course may not be used to satisfy Finance elective requirements. (Same as Urban Studies 290.)


402 Special Topics in Finance (3) Junior and senior level finance seminar. Topics to be announced prior to offering. Prereq: 301, Accounting 202, and Business Administration 201.

425 Investment and Portfolio Management (3) Rigorous introduction to the fundamental principles and concepts of the valuation of stocks and bonds (financial assets) in competitive and efficient financial markets. Risk and return analysis of portfolios of financial assets, capital market theory, security market theory, and financial market microstructure. Prereq: 301.

435 Financial Markets and Institutions (3) Examines the process of capital formation and allocation, including an evaluation of money and capital markets. Study the theories and mathematics of interest rate determination and characterize the financial services firms, which participate in these markets. Review the corporate policies and practices of financial service firms, including management of interest-rate, default, technology, and regulatory risks. Prereq: 301.


475 Insurance and Financial Planning Management (3) Course will cover (1) the basic principles of risk management and insurance and (2) the basic principles of financial, estate, and retirement planning. Prereq: 301.

485 Real Estate Finance and Investment Analysis (3) Explores the utilization of cash flow models to evaluate the financing of and investment in real property. In addition to examining financial feasibility analysis in detail, emphasis is also placed on understanding the factors influencing the dynamics of urban land markets and the government policy issues that must be addressed in urban areas. Prereq: 301.

493 Independent Study (1-6) Letter grade only. *To be taken for more than 3 hours of credit in total, the student must receive consent of instructor and department head. Prereq: Consent of instructor and department head.

FIRST YEAR STUDIES (355)

101 First Year Studies (2) Integration into the academic community, including the nature and purpose of a college education, expectations for academic success, organization of university disciplines, and special emphasis on academic and career planning. Meets twice weekly.

401 Peer Mentor Techniques (1) Training of upperclass students as mentors and advisors for freshmen. Includes cognitive and developmental theories of the college-age student, teaching and learning styles, group communication and listening techniques, mentoring and advising skills. Prereq: Consent of instructor.

402 Peer Mentor Practicum (1) Peer mentoring of First Year Studies Students. Prereq: 401 and consent of instructor. Satisfactory/No Credit grading only. May be repeated. Maximum 3 hours.

FOOD SCIENCE AND TECHNOLOGY (390)

140 The Food Industry (3) Introduction to the food industry and the production of an abundant, safe food supply for national and international markets.

240 Yield Observations in Food Processing (2) Introduction to, observation of and familiarization with processing, packaging, quality control and distribution of different types of foods. Prereq: 140; non-majors must obtain permission of instructor. 1 hour and 1 lab.

259 Evaluation and Grading of Dairy Products (2) Evaluation and scoring of milk, ice cream, cheddar cheese, cottage cheese, yogurt and butter. Prereq: 140 or consent of instructor. 2.75-hour lecture/labs.

269 Meat Evaluation and Grading (2) Grading standards for quality and yield; principles for evaluating beef, pork, and lamb, and application of standards for institutional meat cuts. Practice grading, judging carcasses and cuts, and application of purchase specifications. Prereq: Junior standing or consent of instructor.

301 Professional Development (1) Professional development requirements, resources and opportunities. Individual written and oral report and group discussion on careers and food companies. Prerequisite: Junior standing or consent of instructor.

340 Food Preservation and Packaging (3) Principles, methods and equipment used for preservation of foods. Prereq: 140 and 240 or consent of instructor. 2 hours lecture and 1 lab.

401 Professional Food Science Communication (1) Individual reports and group discussion on current topics. May be repeated; maximum 3 credit hours. Prereq: Senior standing or consent of instructor.

410 Food Chemistry (4) Reactions of water, proteins, lipids, carbohydrates, minerals, enzymes, vitamins, and additives in foods. Prereq: Chemistry 110 or equivalent. Coreq: Biochemistry 310. 3 hours lecture and 1 lab.

420 Food Microbiology (2) Physical, chemical and environmental factors moderating growth and survival of foodborne microorganisms; pathogenic and spoilage microorganisms affecting quality of foods and their control. Prereq: Microbiology 210. Coreq: 429.


430 Sensory Evaluation of Food (3) Principles and methods of sensory evaluation of foods. Prereq: Basic statistics. 2 hours and 1 lab.

442 Special Topics In Food Science and Technology (1-3) Topics of current concern to the food industry. May be repeated. Maximum 9 hours. Prereq: Consent of instructor.

445 Application of Food Chemistry and Processing Principles (4) Interactions and functions of dairy, egg, cereal and other plant based ingredients during the production and storage of processed food products. Prerequisite: FST 340 and 410 or consent of instructor. 3 hours lecture and 1 lab.

452 Science of Dairy Foods (3) Science and technology of the processing of milk and its products. Prereq: 290, 310, 320-329, and 340 or consent of instructor. 2 hours lecture and 1 lab.

460 Meat Science (3) Carcass characteristics of meat animals, muscle structure and composition, cut identification, curing, freezing, and cookery. Prereq: 140 or consent of instructor.

469 Meat Science Lab (1) Slaughter and processing methods for beef, pork, lamb and poultry. Coreq: 460. 1 lab.
490 Food Laws and Regulations (3) A comprehensive examination of the laws and regulations designed to preserve the safety, wholesomeness, and nutritional quality of the United States food supply with an in-depth analysis and discussion of precedent case studies and their impacts on laws and regulations. Core courses in Food Science and Technology will serve as an essential basis for understanding of material covered in this course. Prereq: 140; non-majors must obtain consent of instructor.

493 Practical Experience in Food Science and Technology (1-12) Specialized research in areas of interest under faculty direction. Field experience in supervised internship in the food industry. May be repeated. Prereq: Consent of instructor.

495 Quality Assurance and Sanitation Practices (3) Design and evaluation of a food processing operation to produce a safe and acceptable quality food product. Prereq: 310, 320, and 340 or consent of instructor.

FOREIGN LANGUAGE/LEDUCATION (394)

455 Teaching of Foreign Language, Grades 7-12 (3) Instructional methods, lesson planning, peer-teaching; materials for teaching Foreign Language and culture; evaluation techniques are required for certification in modern foreign languages. Prereq: Completion or near completion of foreign language hours for certification and admission to Teacher Education Program.

FO RESTRY (396)

100 Forests and Forestry in American Society (3) Introductory course examining the role of forests in shaping American culture and society and exploring the evolution of the forestry profession in the North America.

305 Prescribed Fire Management (2) Prescribed fire ecology, use, and management in forest stands. Prereq: Forestry and Fisheries 312. Coreq: 306, 322, 323, 324, 329, 330. Satisfactory/No Credit grading only.

306 Forest Protection (3) Same as Entomology and Plant Pathology 306.

314 Economics of Forest and Wildland Resources (2) Basic principles of forest resource economics; microeconomic applications in forestry; non-market valuation and analysis; financial analyses of private and public forest resource management decisions. Prereq: Economics 201, or consent of instructor.


321 Wildland Recreation (3) Philosophical foundation of recreation; planning, development, and management of forest recreation resources; interpretation of forest resources. Overnight weekend field trips may be required. Prereq: English 102 and Speech 210 or 240 or consent of instructor.


323 People and Forest Practices (2) Examination of how people, institutions and society at large affect and are affected by forest management practices. Case studies and field applications will focus on the wide variety of linkages that exist in society among people and forests. Application of basic skills of collaborative problem solving will be emphasized. Overnight field trips required. Coreq: 305, 306, 322, 324, 326, 329 and 330. Letter grade only.

324 Forest Resource Analysis (2) Growth and yield prediction; financial analysis of forest management alternatives; incorporating computer simulation, risk and uncertainty, and tax into forest investment decisions. goal setting under multiple use concepts; valuation and appraisal of forest uses. Prereq: 314. Coreq: 305, 306, 322, 323, 326, 329, 330.


331 Wood Properties and Uses (2) Wood as a biological material; detailed examination of the woody cell wall; influence of environmental and site conditions on wood formation, physical and mechanical properties of wood and the relationship of the woody cell wall to these properties; wood use in important commercial products; day field trip may be required. Prereq: Botany 110 or consent of instructor. Coreq: 332 for Forestry majors.

332 Wood Identification (1) Cell structure and arrangement as a tool for species identification; microscopic and hand lens identification of important commercial softwoods, hardwoods and foreign woods; laboratory procedures for making temporary slides for microscopic examination; use of reference collection of wood samples; day field trip may be required. Prereq: Forestry, Wildlife and Fisheries 311 or consent of instructor. Coreq: 331 for Forestry majors.

415 Forest Conservation Workshop (1-3) How forest biology, ecology and management relate to conservation issues. How current conservation issues can be integrated into classroom, work and student projects, environmental education strategies. Prereq: Consent of instructor. May not be taken by forestry or wildlife and fisheries majors. May be repeated. Maximum of 3 hours.

420 Forest Resource Management (2) Introduction to forest-level management concepts from an economic perspective. Harvest determination; goal setting under multiple-use concepts; taxes; classical approaches to regulation, linear programming and harvest scheduling; goal programming. Prereq: 314 and 324, or consent of instructor.

421 Forest and Wildland Resource Economics (3) Production functions, supply-demand and market analysis; non-market programs and projects; economic analysis and decision models; investment and financial analysis; managerial economics; taxes; forest products marketing. Prereq: 324 or consent of instructor.

422 Forest and Wildland Resource Policy (3) Policy formulation; criteria for policy determination; forest and wildland law; wildland and recreation; conflict resolution; formal and informal resolution. Prereq: Senior standing or consent of instructor.

423 Wildland Recreation Planning and Management (3) Planning processes, master and site planning, site design projects; management strategies, methods of visitor and recreation site management; case studies. Weekend field trips may be required. Prereq: 321 and Junior standing in Wildland Recreation concentration, or consent of instructor. 2 hours and 1 lab.

433 Wood Adhesives and Glued Wood Products (2) Theory and practice of adhesive bonding; study of the wood substrate-adhesive interface for bonding; principles of adhesion; wood adhesives; gluing of solid wood and composite wood manufacturing practices; laboratory manufacture and/or testing of adhesives, adhesive bond strength and glued-wood product performance; day field trips may be required. Prereq: 331 and 332, or consent of instructor. 1 hour lecture and 2 hour lab.

434 Wood Processing and Machining (2) Processing of wood including primary log breakdown and secondary processing into major products. Fundamentals of machining technology for major types of cutting operations including sawing, boring, planing, veneer cutting, and laser machining; day field trip may be required. Prereq: 331 and 332 or consent of instructor. 1 hour lecture and 2 hour lab.

435 Wood Drying and Preservation (2) Discussion of wood-moisture relationships. Drying systems, commercial processing equipment and practices. Proper use, specification, and disposal of preservative treated wood. Day field trips may be required. Prereq: 331 and 332 or consent of instructor.

436 Wood Industry Survey (1) Industry descriptions and plant visitations to include sawing, lumbering, plywood, flooring, furniture and wood treating. Day field trips may be required. Prereq: Senior status in Wood Utilization Concentration or consent of instructor.

492 Practicum in Forestry (1-6) Supervised experience at departmental-approved, employment location. Prereq: Junior standing. Satisfactory/No Credit grading only.

493 Independent Study in Forestry (1-15) Special research or individual problem in Forestry. Letter grade or Satisfactory/No Credit grading only.

495 Internship in Wildland Recreation (1-6) A highly structured field experience guided by specific learning objectives pre-approved by the instructor and the field supervisor. The student is responsible for field placement. One credit per two weeks of full-time field experience. Prereq: Junior standing, consent of instructor. May be repeated. Maximum 6 hours.

496 Internship in Forestry (1-6) Supervised experience at departmental-approved, employment location arranged by the student. Internship learning objectives must be pre-approved by the advisor/instructor and the field supervisor. Daily log, supervisor evaluations, and final report required. One credit per two weeks of full-time supervised field experience. Prereq: Junior standing, consent of instructor. May be repeated. Maximum 6 hours.

FO RESTRY, WILDLAND AN D FISHERIES (398)

100 Current Issues in Renewable Natural Resources (1) Current resource issues presented by invited guest speaker each week; student discussion and interaction with speaker; some written work required; topics and speakers change each offering; attendance required at all class meetings. May be repeated. Maximum 3 hours. Satisfactory/No Credit grading only.

211 Introduction to Forestry, Wildlife and Fisheries (3) History of natural resources processes and practices; social perspectives and attitudes concerning natural resources and their use; techniques of integrated natural resources management, ecological principles, current policies, social trends, and forest and wildland resource use.

250 Conservation (3) Use and abuse of wildlands resources. Historical perspectives and current management of forests, wildlife, and fish of North America including aspects of biodiversity, recreation and pollution.

311 Dendrology and Silvics of North American Trees (3) Identification, classification and nomenclature of important North American trees and woodyscrubs; forest associations; silvical characteristics of trees and stands as the basis for the practice of silviculture. Day-long field trips may be required. Prereq: 1 year of Botany or Biology. 2 hours and 1 lab.

312 Principles of Silviculture (3) Principles for treating forest stands to achieve selected objectives. Prereq: Chemistry 100. Coreq: PSU 210, 311, and (for Forestry majors) 313; 2 hours and 1 lab.


314 Chemical and Physical Properties of Wood (3) Physical and chemical properties of wood and its components. Major wood use in the paper and wood products industries. Prereq: 331 and 332, or consent of instructor. 2 hours and 1 lab.

317 Principles of Wildlife and Fisheries Management (3) Ecological relationships of wild animals with other animals and their habitats. Biological, social and economic aspects of their management. Prereq: 211 or 250, Statistics 201, Agriculture 290, Mathematics 125. Coreq: Forestry, Wildlife and Fisheries 312. 1 hour and 1 lab.

318 Wildlife Habitat Evaluation and Management (3) Ecological relationships between wildlife and their habitat. Evaluation, modeling, and management of wildlife habitat. Effects of land-use practices on wildlife habitat. Weekend field trips required. Prereq: 317 or consent of instructor. 2 hours and 1 lab.
412 Managing Natural Resource Organizations (3) Human, bureaucratic and managerial factors influencing the effectiveness of natural resource organizations. Alternative stakeholder and public involvement objectives, strategies and mechanisms including client/customer, partnership and adversarial. Conflict resolution, proactive collaborative problem solving and alliance building. Prereq: 317 or consent of instructor. 2 hours and 1 lab.

416 Planning and Management of Forest, Wildlife and Fisheries Resources (3) Integrated forest and wildland resource management through developing land management plans and analyzing case studies including conflict resolution. Prereq: Senior standing. 4 hours and 2 labs.

420 International Natural Resource Issues (2) Identification and analyses of issues regarding forestry, wildlife, fisheries, and associated natural resources beyond U.S. borders. Biophysical, economic, and cultural elements impacting natural resources at the international level. Cases: Northern Europe, Latin America, Indonesia, and Africa.

FRENCH (405)

111-112 Elementary French (3,3) Language Laboratory required. Must be taken in sequence. Not available to students eligible for French 150.

150 Intermediate French Transition (3) Prereq: Two years of high school French and a placement score below the level required for admittance to French 211. Since 150 is a review of elementary French, students who receive credit in this course may not also receive credit for any other 100 level French course and therefore also forfeit the six hours of elementary language credit awarded through placement examination. For elective credit only.

199 French Language and World Business (2) The course will examine the importance of foreign trade at the local, state, and national levels. An interdisciplinary team of faculty from the colleges of Business and Arts and Sciences will provide an overview of the value of language study and international cultural awareness in world business. Restricted to students majoring in the Language and World Business major concentration. See the Director for further information.

211-212 Intermediate French (3,3) Prereq: 150 or 112 or Departmental Placement Exam. Must be taken in sequence. Students who place in 200 level courses from high school will receive six hours of elementary French credit.

217-218 Honors: Intermediate French (3,3) For students of superior ability in French. Incoming freshmen admitted on basis of diagnostic test, high school average, and performance on ACT. Class held to a maximum of 15 for individual attention. Students follow enriched program with emphasis on speaking ability and reading, including literary selections. Students with a grade of A in 211 may enter 218 with permission of instructor. Credit for 300 given to students receiving a grade of A or B in 218.

300 Transitional Grammar Review and Reading (3) For students who have completed the intermediate level sequence and who need additional preparation in reading comprehension, vocabulary, and key areas of grammar. Prereq: French 212 or equivalent or appropriate score on French placement test. May not be counted toward the major or minor.

301-302 Elements of French for Upper Division and Graduate Students (3,3) Elements of language, elementary and advanced readings. Open to graduate students preparing for language examinations, and upper division students desiring reading knowledge of the language. Undergraduate credit only. Not for credit for those having had 111-112 or equivalent. No auditors.

333 Intermediate Composition and Grammar (3) Emphasizes writing skills. Review of major grammatical points in French. Prereq: French 212, 218, French 300 or permission of instructor.

334 Intermediate Conversation (3) Emphasizes speaking skills. Further review of French grammar. Required of all majors. Prereq: French 212, French 218, French 300 or permission of instructor.

345 French for Business (3) Contemporary French language as it applies to business transactions. Understanding and composing business letters; oral communication and elements of French culture related to good business practices. Either 334 or 345 may be applied toward the major but not both. Prereq: 333 or consent of instructor.

351-352 History of French Literature (3,3) Chronological view of French literature in relation to the specific historical developments that have influenced it. Prereq: 333 or 334 or 345 or permission of department.

400 Consecutive and Simultaneous French-English and English-French Translation (3) Consecutive Translation to and from English. Introduction to simultaneous translation to English. Prereq: 334, 345, or equivalent.

410 Medieval French Literature (3) Major representative works of Medieval French literature. Texts in modern French. Prereq: a 300-level literature course. Writing-emphasis course. (Same as Medieval Studies 410.)

411 French Literature of the 16th Century (3) Highlights of 16th-century French literature. Excerpts from Rabelais and Montaigne; readings of poems from the writers from Lyon and members of the Pléiade. Prereq: a 300-level literature course. Writing-emphasis course.


413 French Literature of the 18th Century (3) Master works of the Enlightenment. Prereq: a 300-level literature course. Writing-emphasis course.


420 French Cinema (3) The French cinema from its earliest days through the New Wave directors. Prereq: a 300 level literature course. Can be applied to major. Writing-emphasis course. (Same as Cinema Studies 420.)

421 Phonetics (3) Foundation in the science of phonetics. Practical exercises and individual performance. Graduate credit not allowed to students majoring in a Romance language. Prereq: French 333 or 343 or 345 or permission of department.

422 Advanced Grammar (3) Improving one’s written French by studying basic and more refined structures of the French language. Writing creative free-style compositions. Prereq: French 333 or 343 or 345. Writing-emphasis course.

423-424 Advanced Conversation (1,1) Informal conversation with native speaker on contemporary topics. Stresses in class contact rather than outside preparation. Meets two hours a week for one semester credit. Prereq: French 333 or 343 or 345.

425 Introduction to Descriptive Linguistics (3) Initiation into the theory and practice of techniques of linguistic analysis in the subfields of phonetics, phonology, morphology, syntax, semantics, pragmatics and historical linguistics; discussion of their relevance to the learning and teaching of foreign languages and to the study of literary texts. Writing-emphasis course. (Linguistics 200 strongly recommended.) (Same as German 425, Linguistics 425, Russian 425, and Spanish 425.)

426 Methods of Historical Linguistics (3) (Same as Russian 426, German 426, Spanish 426 and Linguistics 426.)

429 Romance Linguistics (3) Development of Classical Latin through Vulgar Latin into major Romance Languages. Writing-emphasis course. (Same as Spanish 429 and Linguistics 429.)

430 Theatrical French (4) Comprehensive introduction to theatrical production and performance in French. Students collaborate in the creative staging of a French play and they actively participate in its public performance. Prereq: 300-level literature course. May apply toward major.

431 Highlights of French Civilization (3) Survey of French civilization from the Gauls to World War II. Historical events, daily life, all forms of arts. Prereq: a 300 level literature course. Writing-emphasis course.

432 Contemporary French Culture (3) Current French cultural issues placed in historical perspective with a comparative emphasis. In English; readings in French for majors. May apply toward French major. Writing-emphasis course.

433 French and Francophone Women Writers (3) Works by women writing in French considered in cultural context. In English; readings in French for majors. May apply toward French major. Writing-emphasis course. (Same as Women’s Studies 433.)

434 Literature of Quebec (3) Survey of literature of Quebec as well as French literature connected with North America. Readings include explorer and missionary works, such as the Voyages of Champlain and the Journals of the Jesuits, as well as the literature of contemporary Quebec. Prereq: a 300-level literature class. Writing-emphasis course.

440 Capstone Experience in French (3) Synthesizing senior colloquium and tutorial in which students reflect on the raison d’etre of the discipline from a multidimensional point of view. Prereq: a 400 level literature course. Writing-emphasis course.

445 Advanced French for Business (3) Study of advanced contemporary French language and culture as they relate to business transactions. A comparative approach is used to explore differences and similarities between Francophone business culture(s) and those of North America and Japan. Students build upon their knowledge of business terminology while being sensitized to culture differences and the dangers of simplistic stereotyping. Prereq: 345 or consent of instructor. Writing-emphasis course.

450 Special Topics (3) If content varies, may be repeated for credit. Maximum 6 hours.

490 Internship (1-15) Career-related experiences in the United States or abroad with permission of the Language and World Business Director. For Language and World Business majors only. Satisfactory/No Credit grading only.

491 Foreign Study (1-15)

492 Off-Campus Study (1-15)

493 Independent Study (1-15)

FUNDAMENTAL ENGINEERING

See Engineering Fundamentals.

GEOGRAPHY (415)

101-102 World Geography (3,3) Selected topics and world regions, especially those with problems or situations of contemporary interest, to illustrate geographical points of view, concepts, and techniques. May be taken in either order.

108 Honors: World Geography (4) For freshmen and sophomores of superior ability who are interested in the geographical approach to important world problems and issues. Open to students who have received an “A” in Geography 101. Students may not receive credit for both 102 and 108.

131-132 Geography of the Natural Environment (4,4) Characteristics and processes of the earth’s surface and lower atmosphere; their interaction to produce a world pattern of distinctive environments significant to humanity. Must be taken in sequence. 3 hours lecture and 2 hours lab per week. Prereq: 131 is prerequisite to 132.

210 Introductory Technical Geography (1) Covers basic concepts required in 310, 410, 411, and 413. Recommended to be taken prior to or concurrently with these courses. The shape of the Earth, map scales, coordinate systems, and projections. Self-paced, online course with written (offline) final exam.
Introduction to Cartography (3) Properties, sources, uses, design and production of maps as tools for geographical analysis. Introduction to desktop mapping techniques and data display using basic thematic map styles. 2 hours lecture and 2 hours lab per week.

Cultural Geography: Core Concepts (3) Background and method of cultural geography; basic concepts and theories focusing on cultural landscape, culture regions, cultural ecology, innovation and diffusion, cultural integration, and world patterns of cultural phenomena.

Behavioral Geography (3) Types of human behavior, such as shopping, territoriality, commuting, residential mobility, and regional consciousness as they relate to distance, natural environments, and culture. (Same as Urban Studies 323.)

Meteorology (3) Dynamic atmosphere and resulting weather events. Nature of individual weather elements, their measurement and analysis over time and space.


Population and Environment (3) Global and local patterns of population distribution and change as they relate to culture, economic development, technology, and the environment and the future. Prereq: 101-102 or consent of instructor. Writing-emphasis course.


Regional Geography of the United States and Canada (3) Physical, economic, and social distributions as they interrelate to and give distinctive character to regions of the United States and Canada. Writing-emphasis course.

Geography of the American South (3) Geographical appraisal of the southeastern United States, including physical environment and human resources. Origin and development of contemporary economic and cultural traits of the area. Writing-emphasis course.

Geography of Appalachia (3) Interrelation of physical, economic, and social patterns that give distinctive character to the region and its parts, especially in southern Appalachian. Appalachia in perspective in the current American scene. Writing-emphasis course.

Geography of Tennessee (3) Survey of the geography of the State of Tennessee including its cultural, economic, and physical resources, as well as an examination of the state's diversity, development, and its geographic connections within the Southeast region and beyond. Writing-emphasis course.

Geography of Europe (3) Physical, cultural, and economic characteristics of Europe. Emphasis on the geographical dimensions of change in contemporary Europe. Writing-emphasis course.

Geography of Middle America (3) Physical, cultural, and economic characteristics of Mexico, Central America, and the West Indies. Writing-emphasis course. (Same as Latin American Studies 372.)

Geography of South America (3) Physical, cultural, and economic characteristics of the countries of South America. Writing-emphasis course. (Same as Latin American Studies 373.)

Geography of Africa (3) Physical, cultural, and economic characteristics of Africa, with particular emphasis on the area to the south of the Sahara. Writing-emphasis course. (Same as African and African-American Studies 379.)

Global Positioning Systems and Geographic Data (3) Theory and field and laboratory use of Global Positioning Systems for capturing digital geographic data; management of geographic data, including coordinate systems, datum issues, scanning, digitizing, map standards, and uncertainty in Geographic Information Systems. 2 hours lecture and 2 hours lab per week.

Computer Mapping and Geographic Information Systems (3) Concepts, management, and presentation of digital data for spatial analysis, with emphasis on cartographic database structures. 2 hours lecture and 2 hours lab per week. Prereq: 310 or consent of instructor. (Same as Information Management 431.)

Advanced Cartography Techniques (3) Cartographic design and data display techniques for reference and thematic maps. Basic principles and methods of map reproduction. Prereq: 310 or consent of instructor. 2 hours lecture and 2 hours lab per week.

Remote Sensing: Types and Applications (3) Principles and uses of remote sensing imagery, digital data, and spectral data, with particular emphasis on geographic interpretation and mapping techniques. Prereq: 310 or consent of instructor.

Quantitative Methods in Geography (3) Geographic application of statistical techniques, point pattern analysis, and analysis of areal units. Prereq: Mathematics 115 or Statistics 201 or consent of instructor.

PRACTICUM IN CARTOGRAPHY/SERVICES (2-6) Supervised practice in design and production of maps and other graphic materials in the Cartographic Services Laboratory or a similar organization. Prereq: Written consent of department prior to registration. Satisfactory/No Credit grading or letter grade.

Geography of Folk Societies (3) Geographical study of folk culture, emphasizing traditional material culture and rural settlement, with examples drawn from eastern North America and selected foreign areas.

Geography of American Popular Culture (3) Geographical study of regional variations in popular culture, especially focused on youth cultures in the United States. Writing-emphasis course. (Same as American Studies 423.)

Dendrochronology (4) Principles, techniques, and interpretation in tree-ring science. Applications in geography, climate, ecology, forestry, archaeology, and earth sciences. 3 hours lecture and 2 hours lab per week. Prereq: 131-132 or consent of instructor.

The Land-Surface System (3) Characteristics of surface form, water, vegetation, and surface materials, and their regional interrelationships. People as evaluators and agents of change. Prereq: 131-132 or consent of instructor.

Climatology (3) General circulation system leading to world pattern of climates. Climatic change and modification, and interrelationships of climate and human activity. Prereq: 131 or consent of instructor.

Biogeography (3) Study of the changing distribution patterns of plants and animals on a variety of spatial and temporal scales. The effects of continental drift, Pleistocene climatic change, and human activity on world biota are emphasized. Prereq: 131-132 or consent of instructor.

Water Resources (3) Global water resources and hydrologic processes, including water availability, flooding, and water quality issues examined from physical and economic geographic perspectives. Prerequisite: 131-132 or consent of instructor.

Plant Geography of North America (3) Characteristics and distribution of major plant communities of Canada, the U.S., Mexico, and Central America. Relationships to climate, soil, fire, and human disturbance. Long-term history and future prospects. Prereq: 131-132 or course work in botany or consent of instructor.

Urban Geography of the United States (3) Concepts and theories concerning development and significance of systems of cities and internal morphology of cities in the United States. Writing-emphasis course. (Same as Urban Studies 441.)

Rural Geography of the United States (3) Geographical appraisal of rural areas of the United States, including small towns and urban fringes. Problems and potentials of rural America. Writing-emphasis course.

Geography of Transportation (3) Examination of transportation systems, emphasizing their effects on trade patterns, land use, location problems, and development.

Process Geomorphology (3) (Same as Geology 450.)

Teaching and Learning Geography (3) Preparing prospective teachers in the content, skills, strategies, and understandings needed for the effective teaching and assessment of geography in the K-12 schools. Course organization and content based largely on that of the National Geographic Standards.

Internship (3) Career-related experience with business, nonprofit, and government organizations. For geography majors. Prereq: Prior written permission of geography department head or authorized internship director. May be repeated. Maximum 6 hours. Satisfactory/No Credit grading only.

Foreign Study (1-15) Prereq: Written consent of department required prior to registration. Satisfactory/No Credit grading or letter grade.

Off-Campus Study (1-15) Prereq: Written consent of department required prior to registration. Satisfactory/No Credit grading or letter grade.

Independent Study (1-15) Prereq: Written consent of department required prior to registration. Satisfactory/No Credit grading or letter grade.

Undergraduate Research Experience (1-3) Supervised participation in active research projects. Prereq: Consent of department head. May be repeated once; maximum 6 hours. Satisfactory/No Credit grading only.

Special Topics in Geography (1-4) Topics vary. Prereq. consent of instructor. May be repeated with consent of instructor. S/NCR or letter grade. Maximum 8 hours.

Honors: Senior Thesis (3) Students develop undergraduate thesis topic under the guidance of a faculty advisor. Prereq: Open to second semester juniors and first semester seniors who have a 3.2 or better overall GPA and permission of the thesis advisor.


Proseminar in Geography (3) Major themes in geography, especially trends over the past 40 years. Required for majors. Not open to graduate students. Prereq: Senior standing and completion of at least 12 hours of major or minor requirements in geography. Writing-emphasis course.

GEOLOGY (424)

101 The Dynamic Earth (4) Physical processes within and upon the Earth's surface, including the formation of rocks, plate tectonics and earthquakes, and landscapes. Must be taken in sequence. 3 lecture hours and one 2-hour lab or field period.

102 Earth, Life and Time (4) Fossils, evolution and ancient environments, plus a review of 4.5 billion years of earth history. Must be taken in sequence. 3 lecture hours and one 2-hour lab or field period.

103 The Earth's Environments (4) Contemporary problems and solutions related to human disturbance of the environment; topics include: global climate change, pollution, resource depletion. Prereq: 101, 3 lecture hours and one 2-hour lab or field period. Fulfills laboratory science sequence requirement for College of Arts and Sciences.

107 Honors: The Dynamic Earth (4) Laboratory and field emphasis to understanding physical processes, including the formation of rocks, plate tectonics, earthquakes, and landscapes. 3 lecture hours, 1 2-hour lab, and 2 field trips. Consult current College of Arts and Sciences guidelines. Students may not receive credit for both Geology 101 and 107.

108 Honors: Earth, Life and Time (4) Laboratory and field emphasis to understanding fossils, evolution, and ancient environments throughout 4.5 billion years of Earth history. 3 lecture hours, 1 2-hour lab, and 2 field trips. Prereq: Grade of B or better in Geology 107, grade of A in Geology 101, and permission of the instructor. Students may not receive credit for both Geology 102 and 108.

201 Biodiversity: Past, Present, and Future (3) Introduction to how biodiversity has changed through time, especially past mass extinctions and current extinctions from human activities. Topics include measurement of biodiversity, how biodiversity originates, and the dynamics of extinction. May not be applied toward the Geology major.

202 Earth as an Ecosystem: Modern Problems and Solutions (3) Study of the earth as an integrated system between physical and biological processes. Focus is on human disturbances such as habitat destruction and pollution. No prerequisite. May not be applied toward Geology major.
203 Geology of National Parks (3) Geologic principles, processes, and earth materials
responsible for the spectacular landscapes of national parks. Focus on interactions among
internal earth processes, surficial earth processes, and human interactions. 3 lecture hours,
plus an optional field trip. May not be applied toward the Geology major. Writing-emphasis
course.

204 Geology Beyond the Earth (3) The geologic evolution of other bodies in the solar
system, including Mercury, Mars, Venus, meteorites, and large moons of Earth and Jupiter.
The focus is on geologic and possibly biological processes that can be identified and
understood through space missions, remote sensing, and laboratory study of extraterrestrial
samples. No prerequisites. May not be applied toward the Geology major.

310 Mineralogy (4) Introduction to the concepts of crystal chemistry, x-ray diffraction,
optical mineralogy, and geochronological analysis of the important rock-forming minerals.
Laboratory includes study of common minerals, x-ray diffraction analysis and identification
of minerals. Prereq: 101. Chemistry 120-130 or equivalent. 3 lecture hours and one 2-hour lab.

320 Paleobiology (4) Critical analysis of the preserved record of ancient life, with emphasis
on recognition of evolutionary patterns, processes, and extinctions; interpretation of ancient
environments; and the integrated use of fossils and other geologic features in solving
problems of geologic correlation and age dating. Statistical and qualitative approaches
applied to field and laboratory data. Prereq: 102 or consent of instructor. 3 lecture hours and
one 2-hour lab.

330 Igneous and Metamorphic Petrology (4) Study of the properties of crystalline rocks,
the processes that produce them, and their tectonic environments in which they form. Topics
include interpretation of rock textures, phase diagrams, chemical and isotopic processes,
minerals. Prereq: 101-102. (Same as Geography 450.) 1 discussion period. Writing-emphasis
course.

340 Earth Sedimentary Processes (4) Earth surface processes, including weathering and
soil formation, the hydrologic cycle, physical and chemical weathering, biological weathering,
sedimentation, and sediment diagenesis, applied to interpretation of the stratigraphic
record. Prereq: 101, 102 and, 310. 3 lecture hours and one 2-hour lab.

Completion of major core courses or consent of instructor. 1 lecture hour plus field
trips.

370 Earth Structure and Geophysics (4) Stress and strain; mechanics and recognition of
gerologic structures (faults, joints, folds, foliations, lineations, microstructures); introductory
plate tectonics; introductory earthquake and reflection seismology. Laboratory: geologic
map interpretation, cross-section construction, fabric diagrams, fault-plane solutions,
strain analysis, seismic interpretation. Field work: field observation and measurement,
Coreq: 310. 3 hours lecture and one 2-hour lab.

380 Planetary Geoscience (4) Geologic, geophysical, and geochemical systems and
processes at planetary scales. Topics include accretion, differentiation, outgassing,
seismology, magnetism, geochronology, remote sensing, processes modifying surface
1 lecture hour and two 2-hour labs.

381 Minerals and Energy Resources: Geologic Constraints and Environmental
Impacts (3) Distribution and estimates of mineral and energy resources. Environmental
impact of exploitation and utilization of conventional and alternate resources. No
prerequisite. Writing-emphasis course.

401 Quantitative Methods in Geology (3) Applications of calculus and differential
equations to problems in the earth sciences. Examples of the diffusion equation in
hydrogeology; the wave equation in geophysics; -mechanical modeling and boundary
equations to problems in the earth sciences. Examples of the diffusion equation in
hydrogeology; the wave equation in geophysics; -mechanical modeling and boundary
equations to problems in the earth sciences. Examples of the diffusion equation in
hydrogeology; the wave equation in geophysics; -mechanical modeling and boundary

411 Optical Mineralogy (2) Study of the concepts of crystal chemistry, x-ray diffraction,
optical mineralogy, and geochronological analysis of the important rock-forming minerals.
Laboratory includes study of common minerals, x-ray diffraction analysis and identification
of minerals. Prereq: 101. Chemistry 120-130 or equivalent. 2 lectures, one 2-hour lab.

Survey of invertebrate animal phyla, with emphasis on skeletal structure and preservation,
functional morphology, ecology, and stratigraphic distribution. Prereq: 320 or consent of instructor. 3 lecture hours and
one 2-hour lab.

460 Principles of Geochemistry (3) Applications of chemical principles to geologic
systems with emphasis on problem-solving techniques. Topics include phase diagrams,
partitioning of trace elements, thermodynamic principles for evaluating stabilities of
mineral assemblages, aqueous solutions, and applications of radiogenic and stable isotopes
to geologic systems. Prereq: Chemistry 120-130, Mathematics 141-142; recommended
Geology 330 or consent of instructor. 3 lecture hours and one 2-hour tutorial.

470 Applied Geophysics (3) Basic principles geophysical exploration, with emphasis on
applications to environmental problems. Includes seismic and electromagnetic methods.
Prereq: 310-320, 330-340 or equivalent. 3 lecture hours.

475 Physical and Chemical Systems of the Earth (3) Development of the physical
earth from the solar nebula to the present. Formation, composition and evolution of the
hydrosphere, crust, mantle, and core. Interdependence of earthquakes, volcanism, plate
tectonics, and climatic change. Earth's thermodynamic state, and the earth's temperature.
Historical perspective on major controversies of the past, and problems unresolved today.
Prereq: 16 hours geology courses numbered 300 and above. 2 lectures and 1 discussion period. Writing-emphasis course.

480 Principles of Economic Geology (4) Ore-forming processes, classification of mineral
deposits, survey of different types of mineral deposits with examples, and metallogenesis.
Prereq: 310 and 330 or equivalents. Recommended: 460. 3 lecture hours and one 2-hour lab.

485 Principles of Hydrogeology (3) Physical principles of flow, flow equations, geologic
controls, aquifer analysis, water well design/testing, introduction to transport processes.
Prereq: 101, Mathematics 141 and 142, Physics 133 or 134 or equivalent, or consent of instructor.
(Same as Civil Engineering 485.)

486 Hydrogeology Laboratory (1) Application and demonstration of hydrogeological
principles in the field and laboratory. Prereq or Coreq: Geology 485, or Environmental
Engineering 535, or consent of instructor.

490 Special Problems in Geology (1-3) Directed study or special topics. Prereq: Consent
of instructor. May be repeated. Maximum 6 hours.

491 Foreign Study (1-15) 492 Off-Campus Study (1-15) 493 Independent Study (1-15)

GERMAN (433)

101-102 Elementary German (3,3) Language laboratory required. Must be taken in
succession. Not available to students eligible for German 150.

111 Language Laboratory (0) 112 Language Laboratory (0)

150 Elementary German Transition (3) This course is designed to prepare students for
enrollment in German 201. Prereq: Two years of high school German and a placement score
below the level required for admittance to German 201. Since 150 is a review of elementary
German, students who receive credit in this course may not also receive credit for any other
100 level German course and therefore also forfeit the six hours of elementary language
credit awarded through placement examination.

199 German Language and World Business (2) The course will examine the importance
of foreign trade at the local, state, and national level. An interdisciplinary team of faculty
from the Colleges of Business Administration and Arts and Sciences will provide an
overview of the value of language study and international cultural awareness in world
business. Restricted to students majoring in the Language and World Business major
concentration. See the Director for further information.

201-202 Intermediate German (3,3) Must be taken in sequence. Prereq: 102 or 150 or
appropriate placement exam score.

215 German, Special Topics (3) If content varies, may be repeated for credit. Maximum
6 hours.

301-302 Introduction to German Literature (3,3) Prereq: 202 or equivalent. Need not
be taken in sequence.

305 Readings in German (3) Topics in both literary and nonliterary fields. Students or
student groups are encouraged to suggest topics for future courses. May be repeated
with approval of department. Prereq: 202 or equivalent.

311-312 Conversation and Composition (3,3) Prereq: 202 or equivalent.

323 German Film (3) A study of the German cinema from the earliest days to the present.
Writing-emphasis course. (Same as Cinema Studies 323.)

331-332 Elements of German for Upper-Division and Graduate Students (3,3) Elements
of language, elementary and advanced readings and a final 10,000 word translation project.
Open to graduate students preparing for language examination, and upper-division students
desiring reading knowledge of the language. Undergraduate credit only. No credit for
students who have completed 101-102. 322 may be repeated only once for credit. A, B, C,
no credit grading.

350 German-Jewish Topics in Literature and Culture (3) Selected themes, issues,
immigration, movements, and problems in the German-Jewish relationship as reflected in
literature and culture from the 1750s to the present. Variable content. Available for both
majors and non-majors. May be repeated with the approval of the department. Maximum
four times. (Same as Judaic Studies 330.)

363 Modern German Culture (3) German culture from the mid-nineteenth century to the
present: customs, art, music, literature, society, state. Readings in English for non-majors
and in German for majors. Major credit, but no foreign language credit. A writing-emphasis
course. Fulfills Upper-level Distribution Requirement for Foreign Studies for those who
have not satisfied the history requirement with Western Civilization. Writing-emphasis
course.
411-412 Advanced Conversation and Composition (3,3) Prereq: 311-312 or equivalent or consent of department.

415 German, Special Topics (3) If content varies, may be repeated for credit. Maximum 6 hours.

416 Metropolitan Revisited (3) The 20th Century German or Austrian metropolis in the mirror of history, literature, theory, art, architecture, and music. Taught in English. Prereq: German 301-102 or simultaneous enrollment in that course and consent of instructor.

419 German Fairy Tales and Literary Fantasies (3) How and why forms of literary fantasies ranging from apocalyptic dreams to enchanted visions have changed over the centuries. Strong interdisciplinary component, tracing interconnections between philosophy, psychology, religion, and literary history, as well as exploring the relationship between literary, musical and artistic representations of specific themes. Prereq: 6 hours of 300 courses or equivalent, excluding 331-332.

420 Selected Topics in German Literature from 1750 to the Present (3) Prereq: 6 hours of 300 courses excluding 331-332 and courses in English translation, or equivalent.

425 Introduction to Descriptive Linguistics (3) (Same as Russian 425, French 425, Spanish 425, and Linguistics 425.)

426 Methods of Historical Linguistics (3) Phonetics, distinctive feature analysis, sound change types, nature of sound change, principles of reconstruction and fundamental assumptions about language change through time. Non-phonological linguistic change, language families, Proto-Indo-European and other proto languages. Prereq: 6 hours of upper-division foreign language courses excluding courses in translation or graduate reading courses. (Same as Russian 426, French 426, Spanish 426, and Linguistics 426.)

431 Images of Nature and the Body in German Culture (3) Representations of nature from idyllic refuge and object of praise to scientific object and precarious resource. Other themes include sexuality, the body, childhood, and aging. Discussions based on literary and documentary texts and films. Prereq: 6 hours of 300 courses or equivalent, excluding 331-332.

432 German Creative Thinking: Interdisciplinary Dialogues (3) Interdisciplinary connection between German literature and art, music, philosophy, theatrical praxis, psychology, dance, anthropology, history, and the sciences. Comparative analyses of literary and non-fictional texts, films, and other media. Prereq: 6 hours of 300 courses or equivalent, excluding 331-332.

433 Nation, Race, and Ethnicity (3) Examination of cultural constructions of nation, race, and ethnicity and how they have challenged each other and developed in German-speaking countries since the eighteenth century. Close study and analysis of fiction, non-fiction, and films that address controversial topics such as assimilation, integration, racial/ethnic identity formation and multiculturalism. Prereq: 6 hours of 300-level courses or equivalent, excluding 331-332.

434 Extraordinary Wo(Men)-Outcasts, Rebels, Martyrs and Saints (3) Examination of German texts and visual media that have challenged mainstream thinking throughout the centuries. Strong interdisciplinary component, focusing on literary and artistic forms that depict struggles involving religion, politics and gender. Prereq: 6 hours of 300 courses or equivalent, excluding 331-332.

435 Structure of the German Language (3) Contrasting English-German segmental and suprasegmental phonemes, contrasting English-German linguistic structures, selected topics in advanced German grammar and syntactic analysis. Prereq: 6 hours of upper-division German language courses excluding courses in translation and graduate reading courses. (Same as Linguistics 435.)

436 History of the German Language (3) Development of the German language from Indo-European through Proto-Germanic, Old High German, Middle High German to New High German. Internal and external linguistic history of German speech. Prereq: 6 hours of upper-division German language courses excluding courses in translation and 331 or 332. (Same as Linguistics 436.)

477-478 (German Honors (1,1)) Preparation of honors paper portfolio and oral presentation. Prereq: Permission of the department.

485 Business German (3) German used in fields of business, government, administration and economics. Prereq: 6 hours of upper-division German excluding courses in translation and 331 or 332.

490 Internship (1-15) Career-related experiences in the United States or abroad with permission of the Language and World Business Director. For Language and World Business majors only. Satisfactory/No Credit grading only.

491 Foreign Study (1-15)

492 Off-Campus Study (1-15)

493 Independent Study (1-15)

494 German Community Service Practicum (1) Supervised by the director of the Lower-Division German program, students assist German classes at local schools or they perform supervised service with local institutions that promote awareness of German culture among the general public. Prereq: 18 hours of upper-division German courses and consent of program chair. Maximum of one hour credit per semester. May be repeated for a maximum of 3 hours.

497 Senior Honors (1-6) Admission by consent of department. May be repeated. Maximum six hours.

GREEK (257)

121-122 Beginning Greek (3,3) Must be taken in sequence.

261 Intermediate Greek: Grammar Review and Readings (3) Systematic review of Attic Greek and readings from selected authors. Prereq: 122.

264 Intermediate Readings in Greek (3) Content varies. Prereq: Classics 261.

401 Greek Poetry (3) Epic, lyric, drama. Authors vary. Prereq: 261.

402 Greek Prose (3) History, philosophy, and oratory. Authors vary. Prereq: 261.

405-406 Selected Readings from Greek Literature (3,3) For advanced students in Greek, the study of plays, the historical writings, the poetry of ancient Greece in the original Greek. May be repeated for credit. Maximum 9 hours. Prereq: 401-402 or consent of instructor.

HEALTH (449)

110 Personal Health and Wellness (3) Information and behavior necessary to approach health and wellness scientifically and to develop confidence in judgments affecting personal life and wellness. Students who have received credit for Health 330 may not thereafter receive credit for this course.

200 Seminar in Human Sexuality (2) Problems and responsibilities of being male and female as they relate to health and wellness. Satisfactory/No Credit grading only.

225 Alcohol/Drugs and the College Student (2) Problems related to use and abuse of substances potentially harmful to health and wellness. Covers alcohol, drugs, tobacco and other substances. Satisfactory/No Credit grading only.

230 Cardiopulmonary Resuscitation (2) Theory and skills to implement basic cardiac life support following cardiac arrest due to such conditions as heart attack, drowning, electrocution, suffocation, poisoning, drug intoxication, and vehicular and other accidents. Educational and preventive aspects of controlling cardiovascular disease. Leads to basic life support certification.

300 Health Education, Promotion, and Behavior (3) Health education goals, roles, target populations in school, community, and health care settings; health careers and opportunities; health behavior and intervention techniques; health appraisal techniques; health promotion principles.

305 Health of Adolescents (3) Profile of health needs, interests, and behaviors of adolescents and attention to the roles and functions of practitioners relating to youth and youth culture.

306 Health Instruction in Elementary Grades (3) School health program for the child in elementary grades. Teachers become familiar with organizing and presenting health content, health materials, health curricula, and other paramedical resources, and communicating healthful lifestyle. Prereq: Admission to Teacher Education Program.

310 Advanced First Aid and Emergency Care (3) Theory and practice of first aid and emergency care. Provides essential information for developing functional first aid capabilities of lay persons. Course leads to Advanced First Aid and Emergency Care certification. Applicant must be at least 18 years old for certification.

330 Wellness For Health Professions (3) Emphasis on taking personal responsibility for one’s health. Includes topics related to the healthy lifestyle, and provides specific guidelines of how to change inappropriate behaviors. Students who have received credit for 330 may not thereafter receive credit for Health 330.

375 Health Communications (3) Communication strategies for health educators in various settings. Emphasis on interpersonal relationships, public relations, leadership, small group processes, health teams, and effective use of media. Prereq: Health 300, Public Health 300.

400 Consumer Health (3) Major consumer health care providers and health care services; selecting, purchasing, evaluating and financing medical and health care services/products. (Same as Public Health 400.)

405 Alcoholism and Alcohol Education (3) Factors which make alcoholism a serious health problem. Various types of instructional/educational intervention programs.

406 Death, Dying and Bereavement (3) Aspects of dying, death and handling the trauma of loss. Emphasis on medical, financial, physical, legal and social implications of death.

420 Sex Education As It Relates to Human Sexuality (3) Science of human sexuality. Emphasis on the trends, issues, content of sex education.

425 Women’s Health (3) Factors influencing women’s health and wellness as consumers in nation’s health service delivery systems. Study of health problems/concerns of women and techniques for prevention, maintenance and/or correction. (Same as Women’s Studies 425.)

426 Health Education Program Planning (3) Principles of curriculum development, organization, implementation, methodology, and evaluation. Prereq: Health 300, Health 375, Public Health 300, and Psychology 450.

430 Suicide and Crisis Intervention (3) Factors which make suicide a serious health problem. Assessment, intervention, and prevention techniques.

435 Substance Use and Abuse (3) Drug and alcohol abuse problems and suspected causes; pharmacology of drugs and effects on society; strategies for intervention and education.

465 Aging and Health (3) Aging process in a health perspective as it relates to health promotion and wellness of the aged.

470 Special Topics (1-3) For advanced students, teachers, school administrators, nurses and other paramedical personnel. Lectures, demonstrations, films, field trips, and supervised research in special health/wellness or health promotion issues. May be repeated. Maximum 2 hours.

475 Directed Independent Studies (1-3) Individual identification and study of a health/wellness or health promotion issue/issue. Prereq: Consent of instructor. May be repeated. Maximum 12 hours.

483 Field Practice (12) Off-campus health internship or field practice in an educational or other agency with qualified professional. Prereq: Progression and approval for internship. Satisfactory/No Credit grading only. Usually taken in final semester.
HEBREW (458)

141-142 Elementary Modern Hebrew LI (4,4) (Same as Asian Studies 141-142.)
141-142 Intermediate Modern Hebrew LI (4,4) (Same as Asian Studies 241-242.)

HISTO RY (462)

221-222 History of the United States (3,3) 221—Settlement to 1877. 222—1877 to present. Writing-emphasis course.
227-228 Honors: History of the United States (3,3) Consent of department required. Students will attend the appropriate 221-222 lectures and the designated honors discussion section.
241-242 Development of Western Civilization (3,3) Historical survey of the civilization of the western world. 241—Ancient world to 1715. 242—1715 to present. Writing-emphasis course.
247-248 Honors: Development of Western Civilization (3,3) Consent of department required. Students will attend the appropriate 241-242 lectures and the designated honors discussion section. Writing-emphasis course.
255-256 Introduction to Latin American Studies (3,3) Societies of Latin America with special emphasis on dominant culture patterns, social changes, and impact of nationalism. 255—Pre-Colonial and Colonial periods through Independence era. 256—Latter 19th century and the Modern period. Writing emphasis course. (Same as Latin American Studies 251-252.)
261-262 A History of World Civilization (3,3) Historical survey of world civilization. 261—Origins to 1500. 262—1500 to present. Writing-emphasis course.
307 Honors: Introduction/Historical Problems (3) Historical analysis, philosophy of history, and major principles and techniques of research emphasizing the roles of climates of opinion, and frames of reference and the problems of evidence, interpretation and objectivity. Required of students working for honors in history. Prereq: Consent of the department.
310 The Ancient World: Greece (3) (Same as Classics 310.)
311 The Ancient World: Rome (3) Origins of Roman imperialism and its consequences, militarism, empire, socioeconomic changes, constitutional crises, emergence of military and political autocracy. Writing emphasis course. (Same as Classics 311.)
312-313 Medieval History (3,3) 312—Early Middle Ages: 300-1100. Formation of medieval society and institutions. 313—Later Middle Ages: 1100-1400. Height of medieval civilization, and its waning in the fourteenth century. (Same as Medieval Studies 312-313.)
314 Renaissance Europe (3) The period traditionally seen as a transition from the Middle Ages to the modern world. Interrelationship of cultural, social, economic, political and intellectual developments and their emphasis upon historical interpretation.
315 Reformation Europe, 1500-1650 (3) The period during which Europe witnessed religious disunity, economic dislocation and insecurity, political centralization, intellectual skepticism, the origins of modern science, war and the witch craze. (Same as Religious Studies 315.)
316 Early Modern Europe, 1650-1800 (3) Dynamic conflict of a search for order in an age of revolutions, seen in the continued push for political centralization, the impact of the scientific revolution, the intellectual flowering known as the “Enlightenment,” and the English and French revolutions.
319 Modern Europe, 1870-1914 (3) Political, industrial and industrial revolutions against traditions. Topics such as the modern population explosion, urbanization, the political emergence of the middle class and the masses, nationalism, imperialism, rationalism, and Romanticism in social thought and politics. Writing-emphasis course.
320 Contemporary Europe, 1900-Present (3) The transformation from industrial to post-industrial society and the transformation of the European nation-state. Topics such as war and depression and the consequent political and social instability; totalitarian control; decolonization; the impact of Freud, Einstein and existentialism; welfare states; and the problems of European unification. Writing-emphasis course.
321 New Testament Origins (3) (Same as Religious Studies 321.)
322 Christian Thought (3) (Same as Religious Studies 322.)
323 Deviance and Persecution in the Christian West from 1100 to 1700 (3) Emergence and shifts in movements of dissent, popular perceptions and ecclesiastical and civil policies and institutions designed to uncover and combat heretics, homosexuals, Jews, and “witches.” Writing-emphasis course.
330-331 History of England (3,3) 330—To the middle of the 19th century. 331—From the middle of the 19th century.
340 History of Russia (3,3) 340—To the middle of the 19th century. 341—From the middle of the 19th century.
342 History of Nazi Germany (3) The coming to power of the Nazi party in Germany, origins of ideology, rise and fall of the “Third Reich.” Topics include foreign policy, social policy, World War II, Hitler’s brutal rule and racial policies, culminating in mass murder and genocide against the Jews of Europe. Writing-emphasis course.
346 The Environment in U.S. History (3) Environmental consequences of competition for scarce resources among Indians, European Americans, and Hispanic Americans in eras of colonization; migration; industrialization; urbanization; conservation; and environmentalism. Writing-emphasis course.
350 Colonial America to 1763 (3) Social and cultural developments in the American colonies from the point of contact between Europeans and Native peoples through the mid-eighteenth century. Writing-emphasis course.
352 The American Revolution, 1763-1789 (3) The growing estrangement of the American colonies from the British Empire, the War for Independence, and the creation of a new American republic. Writing-emphasis course.
354 The United States during the Jacksonian Era, 1815-1860 (3) An examination of the major economic and political developments in antebellum America within the framework of the struggle between nationalism and sectionalism.
355 The Civil War and Reconstruction Eras, 1860-1877 (3) An examination of the major economic and political developments in the United States during the Civil War and Reconstruction eras.
356 History of Latin America (3,3) 356-Colonialism and Independence, 1500-1825. 356-National Development, 1825 to present. Writing-emphasis course. (Same as Latin American Studies 360-361.)
362-363 History of East Asia (3,3) 362—East Asia: History and Culture to 1600. Chieﬂy China and Japan; Korea and Vietnam also included. Confucianism, Buddhism, social structure, political tradition, and Japanese feudalism. Comparison and contrast with Western history and culture. 363—Modern East Asia since 1600: China, Japan, Korea and Southeast Asia. Comparative modernization: Western impact, cultural transformation, communist movement, and Japan’s militarism and postwar economic success. Writing-emphasis course.
364 History of China (3) Changes and continuities of the world’s longest uninterrupted civilization with a quarter of the human race; similarities and differences between China and Western civilizations; Chinese revolutions in historical context. Writing-emphasis course.
365 History of Japan (3) Japanese history from mythological origins to the postwar age, with emphasis on politics and society. Topics include the influence of disease on society, Japanese Feudalism, popular culture in the 1700s, the Meiji Restoration, and Japanese militarism. Writing-emphasis course.
366 History and Archaeology of Mesopotamia (3,3) Mesopotamia (Assyria and Babylonia) from the fifth millennium to the Iron Age. Specific topics will include the development of village and state-level societies, and the emergence of social and political institutions, literacy, imperialism, and intersocietal interaction. Writing-emphasis course.
370 History of the Middle East (3,3) 370—Middle East from the sixteenth century to the present. Impact of the West and background of current problems in the area. Writing-emphasis course. (Same as Judaic Studies 369-370.)
373 Historical Issues (3) Variable content. Broad thematic issues in historical perspective. Lecture-discussion. Especially suitable for non-majors; also open to majors. May be repeated. Maximum 9 hours.
374 A History of Imperialism since 1850 (3) Relationships between the West and Africa, Asia, and Latin America since 1870 across a broad spectrum of critical issues. Includes economic interdependence and underdevelopment, ideologies in conflict with non-Western world views, and the search for individual identity in circumstances of cultural disruption. Writing-emphasis course.
375 Revolutions in Historical Perspective (3) Comparative history of major revolutions which transformed political, social, and economic structures and values, such as those in France, Russia, China, Mexico, and Iran. Contrasts and common patterns in their causes, phases and outcomes. Relations between leaders and masses. Major theories of revolution. Writing-emphasis course.
381 History of South Africa (3) South African history from the pre-colonial period through the apartheid and post-apartheid eras. Topics include African state formation and resistance against Roman Empire; the impact of industrialization, the evolution of modern resistance movements, and the first democratic elections in 1994. Writing-emphasis course. (Same as African and African-American Studies 381.)
383 History of Jewish Civilization I (3) Biblical-Talmudic Periods (1200 B.C.-600 C.E.). Origins of the Israelites, development of independent Israelite and Jewish states in the ancient Near East, rise of Jewish Diaspora communities; cultural convergences with Hellenism and early Christianity; and the development of Rabbinic Judaism. Writing-emphasis course. (Same as Judaic Studies 383.)

384 History of Jewish Civilization II (3) Medieval - Present. The resiliency of Jewish civilization in the face of external pressures; of Sephardic and Ashkenazi Jewry in medieval Europe; North Africa and the Middle East; Jewish mysticism; Judaism's encounter with modernity; Hasidism to the Holocaust; the Reform movement and Zionism; the Holocaust; the foundation of the State of Israel; and assimilation and the future of Judaism. Writing-emphasis course. (Same as Judaic Studies 384.)

385 Studies in World History (3) Variable content. Selected topics in world history involving analysis of two or more world cultures. May be repeated. Maximum 9 hours.

395 The Crusades and Medieval Christian-Muslim Relations (3) The major Christian crusades in the Middle East and Spain, 1050 to 1500; their political and military history; and the larger context of the medieval religious, cultural, intellectual, and diplomatic confrontation between Christians and Muslims. Writing-emphasis course. (Same as Judaic Studies 395.)

407 Honors: Senior Paper (3) Bibliographic search, research and conceptual clarification for the senior paper. Required of students working for honors in history.

408 Honors: Senior Paper (3) Organization and writing of the senior honors thesis. Required of students working for honors in history. Grade of A or B required for honors credit.

421 Comparative Studies in African and African-American Societies (3) (Same as African and African-American Studies 421.)

429 Medieval Intellectual History (3) The evolution of thought in Europe from late antiquity to the Renaissance, with emphasis on questions and problems central to the major thinkers and their social, economic, and political contexts. Writing-emphasis course.

430-431 European Intellectual and Cultural History (3,3) 430—Renaissance to Revolutions, 1300-1789. 431—Romanticism to Relativism, 1750-Present.

432 Women in European History (3) Comparative analysis of the roles of women in Medieval and early Modern Europe. Partnership between family structure, sexual attitudes and the economic and political roles of women with an emphasis on autobiographical writings by women. Writing-emphasis course. (Same as Women's Studies 432.)

439 Southeast Indian History (3) Southeastern Indian history from the protohistoric period to the present. Interaction of Euromerican, African-American, and Native American peoples; warfare, slavery, resettlement and other policies from the American Revolution to twentieth-century problems such as tribal sovereignty and dependency. Writing-emphasis course.

441 The American West (3) From 1803 to present, with emphasis on diverse ethnic cultures, colonial status, extractive industries, and the ongoing debate about the preservation of natural resources on federal lands. Writing-emphasis course.

442 Indian-White Relations in United States History (3) Dilemma of two cultures existing side by side; background and formulation of official Indian policy; undermining of policy by frontier circumstances; Indian wars and campaigns; present-day relationships. Writing-emphasis course.

443-444 History of the South (3,3) 443—Old South from colonial period through the Civil War. 444—New South from Reconstruction through the Second Reconstruction.

445 The African-American Experience from the Colonial Period to the Present (3) Topics include the development and history of African-American culture and the effect of education on the status of Blacks. (Same as African and African-American Studies 445.)

446 History of American Culture (3) Topical examination of the origins and development of America's cultural values, attitudes, and beliefs from the formation of the nation to the present. Creative expression and creation of a national culture. Civil War as cultural conflict; challenge of cultural pluralism; rural versus urban values; cultural upheaval 1920s-30s; present nature of American culture. Writing-emphasis course.

449 History of Tennessee (3) Tennessee's history from the 18th century to the present.

450 History of U.S. Foreign Relations to World War II (3) Examines the ideology and practice of U.S. international relations from independence to entry into the Second World War.

451 United States Military History, 1754 to the Present (3) The nation's broad strategic aims and means used to attain them, shifting strategy, tactics and weaponry involved in wars, and relationship between American society and its armed forces. (Same as Military Science 450.)

452 The American Experience in World War II (3) Diplomacy and warfare in Europe and Asia and the impact of the war on American society.

453 Women in American History (3) Approaches of 432 applied to American society. Writing-emphasis course. (Same as Women's Studies 453.)

454 Cities and Urbanization in American History (3) Origins, growth, and influence of American cities in development of the nation from colonial era to present. Writing-emphasis course. (Same as Urban Studies 454.)

455 Environmental History of Urban America (3) Pre-industrial, industrial, and modern environmental cities, including animal pollution; epidemic disease; infrastructure construction; hinterland resource exploitation; and urban renewal and clean-up. Writing-emphasis course.

459 Jefferson's America, 1789-1815 (3) Nation-building in the United States from the Constitution to the War of 1812. Economic modernization, the new national government, the first political party system, foreign relations, the changing status of women, the growth of cities, and changing ideas about deference, class, and community. Writing-emphasis course.

460 History of Brazil (3) History of Latin America's largest nation. History of boom and bust economic cycles, slavery and the abolition of slavery, populism, military rule, and redemocratization. Writing-emphasis course. (Same as Latin American Studies 460.)

461 Cuban Revolution in Historical Perspective (3) Cuban history with major emphasis on Cuban Revolution and Cuban-U.S. relations. Writing-emphasis course. (Same as Latin American Studies 461.)

462 History of Mexico (3) Pre-Columbian, colonial, national, and modern Mexican history, emphasizing the twentieth century's first true social revolution, the Mexican Revolution, and contemporary social and economic problems. Writing-emphasis course. (Same as Latin American Studies 462.)

463 Modern Latin American History in Film (3) Major events and trends in Latin America since 1945 as represented in fictive films made by Latin Americans. Topics include economic development, the Cuban Revolution, and Authoritarianism. Writing-emphasis course. (Same as Latin American Studies 463.)

470 Studies in British History (3) Variable content. Selected themes and issues in British history. May be repeated. Maximum 9 hours.

471 Studies in Western European History (3) Variable content. Particular aspects of Western European history such as witchcraft, revolutions, or nationalism. May be repeated. Maximum 9 hours.

472 Studies in Central European History (3) Variable content. May be repeated. Maximum 9 hours.

473 Studies in Eastern European History (3) Variable content. Selected aspects of Eastern European history, especially on Russian and Polish history. May be repeated. Maximum 9 hours.

474 Studies in Medieval and Early Modern European History (3) Variable content. Particular aspects of medieval and early modern Europe. May be repeated. Maximum 9 hours.

475 Studies in Latin American History (3) Variable content. Significant issues in Latin American history. May be repeated. Maximum 9 hours. Writing-emphasis course. (Same as Latin American Studies 475.)

476 Studies in Asian History (3) Variable content. Particular aspects of Middle Eastern and East Asian history such as modernization in the Middle East, Revolution in China, Japanese Feudalism, and others. May be repeated. Maximum 9 hours.

479 Studies in United States History (3) Variable content. Particular aspects of United States History. May be repeated. Maximum 9 hours.

480 Studies in African History (3) Variable content. Different areas of the continent and diverse aspects of the African experience such as African resistance movements, African political parties, the relationship of social and economic development under colonialism to social and economic conditions in modern African nations, and Apartheid and resistance in South Africa. May be repeated. Maximum 9 hours.

481 Studies in History (3) Variable content. Subject matter not covered in other courses. May be repeated. Maximum 9 hours.

482 Colloquium in History (3) Historical theme or problem; emphasis on questions and skills, with special reference to historical writing, including critical analysis of both primary and secondary sources. Recommended for seniors. Writing-emphasis course.

483 History of U.S. Foreign Relations Since WW II (3) Examines the ideology and practice of U.S. international relations since World War II.

484 Studies in Jewish History (3) Variable content. Significant topics in the study of Jewish civilization and culture, including the development of the synagogue, Judaism and ethnicity, and the history of Jerusalem. May be repeated. Maximum 9 hrs. Writing-emphasis course. (Same as Judaic Studies 484.)

485 Studies in Cross Cultural History (3) Variable content. Comparative analysis of specific historical issues or specific facets of the relationships between two or more cultures. May be repeated. Maximum 9 hours.

486 Studies in the Ancient Near East (3) Variable content. History and archaeology of Egypt, Anatolia (Turkey), Cyprus, and Persia (Iran), the rise of social complexity, and social boundaries in antiquity. May be repeated. Maximum 9 hours. Writing-emphasis course.

489 Oral Histories of War and Peace (3) Oral history methodologies and interviews with veterans and others who have shaped modern American military history. Special focus on World War II, the Korean War. History 451, U.S. Military History, is recommended but not required.

490 Internship in the Center for the Study of War and Society (3) A structured field work experience in public history at a research center documenting modern U.S. military history, including special projects such as grant writing, interviewing, and archival processing. Prerequisite: Consent of the Director of the Center for the Study of War and Society. May be repeated. Maximum 6 hours.

491 Foreign Study (1-15)

492 Off-Campus Study (1-15)

493 Independent Study (1-15)

HOTEL AND RESTAURANT ADMINISTRATION

| 401 Food Quality Principles (3) Scientific principles involved with selection, preparation, evaluation and safety of quality food. 2 hours and 1 lab. |
| 402 Microcomputer Applications (3) (Same as RCS 102; CFS 102; Nutrition 102). |
| 119 Introduction to the Service Industry (3) Organization and basic operating systems for the career paths available in the hospitality, retail and recreation and tourism industries. Managerial competencies necessary for success in these fields. (Same as RCS 119). |
210 Foodservice Operations Management (3) Principles of menu development, equipment selection, layout, purchasing, production, and service of food in volume.

211 Hotel Operations (3) Theoretical operation of lodging and an exploration of the lodging industry in terms of nature of work, organizational structure of lodging segments, the meaning of guest services, differentiation of brands, current industry issues, and evaluation of the market place.

224 Tourism Management (3) Examination of the various components of the tourism industry, motivators to travel, and the various market segments. Includes the analyses of the economic, social, cultural, and environmental impacts to tourism. Prereq: RCS/HRA 119 or consent of instructor.

311 Developing a Diverse Service Workforce (3) Personnel management procedures and polices to develop a diverse service workforce. Topics include leading organizational change; labor cost; employee review process; retention issues. Prereq: HRA/RCs 210 or HRA 211. (Same as RCS 311.)

312 Leadership in the Service Marketplace (3) Analyses of leadership and employee dynamics in the service organization. Includes the application of theory to the Development personal, interpersonal, and group communication skills, and the management of a diverse workforce. Prereq: RCS/HRA 311 or consent of instructor. (Same as RCS 312.)

321 Quantity Food Procurement, Production and Service Laboratory (1) Application of principles in determining needs, procuring, storing, producing and serving foods in volume. Prereq: Nutrition 100 or 107, Microbiology 210, Coreq: 210.

326 Food and Lodging Cost Control (3) Budget, cost analysis, computer, financial statement use in decision making in lodging and foodservice systems. Prereq: 210, Mathematics 119/123, and Accounting 201, or consent of instructor.

341 Food Safety and Sanitation for the Food Service Industry; Hazard Analysis Critical Control Points (HACCP) (3) Students will be eligible to become ServSafe certified. Prereq: or Coreq: 210

376 Strategies for Growth (3) Issues concerning achievement of business growth with focus upon the consumer, operational, and financial dimensions of the service industry. Prereq: 320 or RCS 310, RCS 341, Marketing 300. (Same as RCS 376).

390 Professional Development (3) Development of skills important to career success, focus on business communications, time and stress management, motivational and negotiating skills. Co/Prereq: 311, 326 or RCS 310, and progression into the program. (Same as RCS 390.)

410 Strategic Planning for the Hospitality Industry (3) Hospitality Management from a strategic planning perspective; development and implementation of restaurant strategy from financial, operational, and customer orientation. Prereq: 390.

420 Professional Experience in Service Management Hospitality (6) Supervised educational experiences in selected hospitality operations. Prereq: Progression into the program. Prereq: 410, Satisfactory/No Credit grading only.

423 Marketing for Hospitality and Tourism (3) Marketing principles and practices specifically applied to the hospitality and tourism industry. Includes the analyses of various hospitality and tourism marketing strategies and the implications of those strategies. Develops an understanding of marketing tools as an integral part of the hospitality and tourism operation. Prereq: 210, 211, 224, Marketing 300, or consent of instructor.

425 Legal Issues in Service Management (3) Legal rights and responsibilities of service industry managers, their staff and clientele. Prereq: 390, RCS 390, progression into the program or consent of instructor. (Same as RCS 425)

435 Conventions and Meetings: Pursuit and Attainment (3) Difficulties of the meeting planners, identifying decision makers, role selection, negotiating, budgeting, marketing and gaining commitment from group. Prereq: 210, 211, 390 or consent of instructor.

440 Special Topics: Hotel and Restaurant Administration (1-3) Developments, issues and problems in Hotel and Restaurant Administration; topics variable. May be repeated. Maximum 3 credits.

445 Advanced Food Production and Service Management (3) Application of management concepts in menu design, personnel, cost control and production and service of food. Prereq: 2 hours and lab. Prereq: 390.

450 Advanced Lodging Management (3) This course is designed to allow students to interpret operational problems currently occurring in the hotel industry in a case study, interactive environment. The student will analyze management opportunities and threats within a hotel and determine reasonable alternatives. Prereq: 211, 390, Marketing 300.


494 Directed Study: Hotel and Restaurant Administration (1-3) Individual student-faculty experience. Prereq: Junior and senior standing, consent of the instructor. Satisfactory/No Credit grading only.

HUMAN ECOLOGY (520)

310 Design in Everyday Life (3) Aesthetic environment. Planning and organizing interior spaces to meet personal and family needs. Relationship of materials and furnishings to architectural space.

410 Human Ecological Systems (3) Systems theory as a component of human ecology; factors impacting on the nature of individuals, families, and environments. Prereq: Child and Family Studies 210 or 220 or RCS 341; 6 upper-division hours in major.

HUMAN RESOURCES DEVELOPMENT (529)

340 Training Systems: Strategies and Techniques (3) Fundamental knowledge, strategies and techniques of training systems required of students planning careers in HRD. During design and development, students develop skills in sequencing instruction, developing effective instructional strategies and techniques that produce the desired learning outcomes, multimedia presentations, and assessment and evaluation tools required to test desired outcomes for the learner, the trainer, and the program. Prereq: Business Administration 331 and 332 or 341 and 342.


452 Technology in Learning Environments (3) Addresses the use of diverse technology for creating and facilitating instruction and learning. Technology use is explored in terms of stimulating, channeling, and sustaining learning. Prereq: 340; Coreq: 440.

455 Program Evaluation (3) Provides instruction and practices in leader and program evaluation that occurs in occupational and educational settings. Conducting leader and program evaluation becomes one of the most critical competencies for trainers and educators in organizations today. By completing this course, the student will understand the concepts of performance assessment, different approaches of program evaluation, program techniques of program evaluation, and the four-level evaluation model widely used for program evaluation in industries. The students will also possess competencies to conduct program evaluation. Prereq: 440.

479 Internship and Career Development (3) Provides an opportunity to integrate and apply the knowledge and skill-based competencies obtained in the classroom. Experience through the internship assists the student in making a career decision. The internship is the capstone course bridging the gap between the classroom and the corporate world. Prereq: 452.

485 Special Topics in Human Resource Development (1-3) Topics to be assigned. May be repeated.

493 Independent Study (3) Topic arranged by student in collaboration with a supervising faculty member. May be repeated for a maximum of 6 hours. Prereq: Junior or senior standing.

HUMAN SERVICES (532)

330 Thinking About People (3) Development of thoughtful, informed and empathic attitudes toward human beings—those providing services as well as those receiving service. Prereq: Progression to the major.

380 Human Services Methodologies I (3) Basic helping skills essential to the effective delivery of Human Services. Prereq: Progression to the major or consent of instructor.

390 Information Interpretation and Assessment (3) Information gathering and assessment for human services are examined in depth in relation to human services practice. Formulating questions, identifying relevant data, using related resources, interpreting information and synthesizing this information in a practical setting. Prereq: Progression to the major.

400 Prefield Seminar (2) Prefield Seminar: Preparation for field sequence. Exploration of field/work settings within human service through in-class activities, field trips, and guest lecturers; includes current topics and professional behavior. Satisfactory/No Credit grading only.

420 Human Services Methodologies II (3) Includes reality therapy, behavior modification, family systems, client-centered and rational emotive therapy. Discussion and role playing of methods and skills that will be used during the field experience. Prereq: Progression to the major. 330 Coreq: 440.

430 Working Within The System (3) Capstone Experience. Context within which the need for human services arises and analysis of the process through which such services are provided. Prereq: Progression to the major; 330, senior standing or consent of instructor. Writing-emphasis course.

440 Human Services Field Work (6) Human Services Field Work (6) Practical field experience within an approved and supervised human services setting. Explores day to day activities within a human services organization. Develops specific helping skills; involvement in roles and functions of human services profession; provides direct service in a supportive learning setting. For majors only. Prereq: Progression to the major, 380, 400, 420. Satisfactory/No Credit grading only.

441 Human Services Field Work II (6) Human Services Field Work II (6) Practical field experience within an approved and supervised human service setting in a different venue than previous 440 field placement. Explores day to day activities within a human service organization. Develops specific helping skills; involvement in roles and functions of human service profession; provides direct services in a supportive learning setting. For majors only. Prereq: 420, 440. Satisfactory/No Credit grading only.

450 Special Topics in Human Services (3) Issues, methods, values, and trends with implications for helping practitioners, such as art therapy, legal and ethical issues, and self-awareness education. May be repeated. Maximum 9 hours.

491 Foreign Study (1-15)

492 Off-Campus Study (1-15)

493 Independent Study (1-15)
INFORMATION MANAGEMENT (558)


342 Introduction to Database Systems (3) Fundamentals of database technology, database design, database use, database system controls, and database implementation. Focus is on developing the technical and business skills necessary to successfully gather information and improve business operations in technology-driven environments. Students work “hands-on” with modern database management systems. Prereq: 341.

351 Object-Oriented Programming (3) Fundamentals of object-oriented programming languages. Topics include object-oriented systems design and development, data and file structures, and algorithms. Prereq: 341.

431 Computer Mapping and Geographic Information Systems (3) (Same as Geography 411.)

442 e-Business (3) Internet technologies currently being used for implementation and control of e-businesses, security issues created by these technologies, the behavioral and organizational challenges being faced by firms that are integrating these technologies, and the impact of these technologies on emerging business models. Comparison of traditional business models with e-Business models. Web application development using current web development tools requires programming skills. Prereq: 351.

INFORMATION SCIENCES (560)

101 Information Foundations (3) Nature of information: sources, value, creation, organizing principles, transfer, uses in society. Issues: ethics, privacy, copyright, preservation, national information policy, equity of access. Information oriented careers. Undergraduate credit only.

102 Technologies for Information Retrieval (3) Principles, selection, and use of computer-based information management applications; software identification and task appropriate uses; telecommunications, utilities, and memory management systems; multiple operating systems and technology for national network connections; information services via computers. Undergraduate credit only.

310 Information Seeking: Resources and Strategies (3) Information as critical resource for research and decision making; emphasis on planning, executing, and evaluating information searches. Focus on topic of student’s major. Undergraduate credit only.

330 Books and Related Materials for Children (3) Materials for children in leisure time or classroom activities; criteria for selecting books, magazines, recordings, films and related materials; storytelling and other devices for encouraging reading. Undergraduate Credit only.

350 Information Consumer (3) Information in society, information economy, knowledge/learning society; publishing and information providers: hosts, bulletin boards, nets; information overload/analyis, anxiety, science fraud, gatekeeping concepts; updating systems; environmental scanning; information consumption techniques. Undergraduate credit only.

430 History of the Book (3) History of writing and various methods of bookmaking.

450 Writing About Science, Technology and Medicine (3) (Same as Journalism 430).

485 Introduction to Electronic Communications and Information Resources on the Internet (3) Exploration of worldwide information and communications resources including e-mail, newsgroups, and the world wide web. Discussion of information issues including copyright, censorship, privacy, and access.

486 Advanced Electronic Communications and Information Resources on the Internet (3) Exploration of advanced information and communications issues, resources and tools including forms, scripting and search engines. Prereq: 485 or consent of instructor.

490 Information Environment (3) Generation, production, management, dissemination, and use of information. Roles of information in society, information seeking and user behavior, information industry, economics of information products and services, technological and organizational change, information professions, and issues.

INSTRUCTIONAL TECHNOLOGY (569)

486 Introduction to Instructional Computing (3) Classroom uses of computers, applications for teachers, overview of computer operation and software for teachers of all grades. Prereq: Admission to Teacher Education.

INTERDISCIPLINARY PROGRAMS (581)

100 Selected Topics (1-3) May be repeated. Maximum credit 6 hours.

400 Selected Interdisciplinary Topics (1-12) Acceptable for major or minor credit in any Interdisciplinary Program with the consent of the Director of Interdisciplinary Programs and the respective chairperson. May be repeated for credit to a maximum of 12 hours. Letter grade or Satisfactory/No Credit grading.

491 Foreign Study (1-15) Registration by permission of director of Interdisciplinary Studies.

492 Off-Campus Study (1-15) Registration by permission of director of Interdisciplinary Studies.

493 Independent Study (1-15) Registration by permission of director of Interdisciplinary Studies.

INTERIOR DESIGN (582)

141 Introduction to Interior Design (2) Orientation to the profession; relationship to allied fields; contemporary development; philosophical approaches. Open only to majors in interior design and architecture or consent of instructor.

171 Visual Studies (3) Classification and properties of two and three-dimensional visual organization; design principles; visual and spatial elements within simple and complex visual systems; role of movement in experiencing scale and volumetric space. Three hour studio. Open only to majors in interior design and architecture. Prereq: 141 or consent of instructor.

200 Human-Environment Systems (3) Role of culture in defining environment; physical, social and conceptual aspects of human-environment systems; impact of environment on human behavior, feelings and values; mutual-casual properties of behavior-environment systems; nature of technology. Same as Urban Studies 200B.

221 Theory of Color (2) Introduction to basic color theory and its application to interior environments. Explores aesthetics and psycho-physiological effects.

261 Materials and Resources for Interiors (2) The development and application of materials and resources used in interior architectural space. Prereq: 171 or Arch 172 or consent of instructor.


272 Fundamentals of Interior Design II (6) Problem solving, spatial organization of micro environments, increasingly larger scale; communication of total design solution graphic, audio and photographic techniques; emphasis on the use of color. Prereq: 271. Six-hour studio.

311 History of Interior Architecture (4) Interior architecture, decoration and decorative arts within cultural context, ancient through nineteenth centuries, emphasis on Italy, France, England, and American. Prereq: Art History 172 and 173 or consent of instructor.

312 History of the Contemporary Interior Architecture (2) Interior architecture, furniture, design philosophies, nineteenth century roots for twentieth century developments, Europe and America. Design as influenced by movements in the fine arts, technological advances, cultural context. Prereq: 311 or consent of instructor.

331 Working Drawings (3) Building on previous computing skills, this course focuses on interior construction documentation through computer aided design application. Course will emphasize technical graphic conventions, codes and regulations affecting the health, safety, and welfare of public. Three hour studio. Prereq: 272, Architecture 231 or equivalent.


371 Intermediate Interior Design I (6) Studio problems of intermediate complexity with emphasis on programming and schematic design phases; in-depth analysis of current programming methods; integrates and extends previous knowledge of spatial organization and planning of micro and macro environments. Six hour studio. Prereq: 272 and third year standing in interior design.

372 Intermediate Interior Design II (6) Studio problems of intermediate complexity; integrates and extends previous knowledge of working drawings, materials and sources, design methods, spatial organization and planning of micro and macro environments. Six hour studio. Prereq: 371, Architecture 231.

400 Proxemics (2) Analysis of space and behavior; within a cultural context. Application to development of design process. Examination of theoretical foundations and concepts from environment and behavior. Simulation techniques and methods for identifying behavioral design requirements. Prereq: 200, 231. Coreq: 471 or consent of instructor. Two hour studio.

411 History of American Interior Architecture (3) Historical developments in interior architecture and decorative arts within cultural context, colonial era through nineteenth century. Prereq: 311 or consent of instructor.

417 Honors: Interior Design (1-4) Advanced research in interior design problems for juniors or seniors. Prereq: Consent of Interior Design faculty. May be repeated. Maximum 8 hours.

420 Practicum for Interior Design (3) Supervised experience in a professional design firm; business practices, project management and design philosophy. Prereq: 360, 372 and consent of instructor.


460 Lighting for Interior Design (3) Lecture presentation of design principles in lighting, acoustics and mechanical systems. Course will emphasize fundamentals of lighting design practices and techniques. Prereq: 271, Physics 161, or consent of instructor.

464 Environmental Factors in Design (3) Human factors and associated research methods and design methodologies related to the built environment.

471 Advanced Interior Design I (4) Non-residential studio problems of advanced complexity; integrates and extends previous experiences utilizing systematic design methodologies. Prereq: 372, 420, Coreq: 400, or consent of the instructor Four hour studio.

472 Advanced Interior Design II (6) Comprehensive studio problems of advanced complexity; integrates and extends previous experiences utilizing systematic design methodologies. Prereq: 471 or consent of instructor. Six hour studio.

480 Furniture Design (4) Human factors data applied to design of body support, task support, storage and systems, construction drawings and scale models; advanced millwork design; materials and manufacturing processes. Prereq: 471 or Arch 372 or consent of instructor.
instructor. Two hour lecture and two hour studio.

491 International Study (1-15) Individual or group studio and/or study abroad; academic research, field investigation, or studio experiences. Determination of credit based on particular international experience. Prereq: Consent of all interior design faculty.

493 Directed Studies in Interior Design (1-4) Student or staff initiated research or studio investigation of special topic. Elective credit only. Prereq: Consent of instructor. May be repeated. Maximum 8 hours.

ITALIAN (584)

111-112 Elementary Italian (3,3) Introduction to Italian. Must be taken in sequence. Language Laboratory required.

199 Italian Language and World Business (2) This course will examine the importance of foreign trade at the local, state, and national levels. An interdisciplinary team of faculty from the colleges of Business and Arts and Sciences will provide an overview of the value of language study and international cultural awareness in world business. Restriction: students majoring in Language and World Business. See the Director for further information.

211-212 Intermediate Italian (3,3) Sequence stresses reading, writing, listening and speaking Italian to prepare for upper division courses in the language. Must be taken in sequence. Language Laboratory required.

311-312 History of Italian Literature (3,3) Chronological view of Italian literature in relation to the specific historical developments that have influenced it. Prereq: 212 or equivalent.

314 Highlights of Italian Civilization (3) Survey of Italian civilization with special attention to major social, political and cultural achievements. Prereq: 212 or consent of instructor.

341-342 Intermediate Grammar, Composition and Conversation (3,3) Grammatical analysis of Italian prose; review of grammatical principles and their application in translation from English to Italian, both written and oral; exercises in free composition. Prereq: 212 or equivalent.

401 Dante and Medieval Culture (3) Introduction to the significance of this great Italian writer. Prereq: 212 or consent of instructor. (Same as Medieval Studies 401.)

402 Petrarch and Boccaccio (3) Prereq: 212 or consent of instructor. (Same as Medieval Studies 402.)

403 Literature of the Rinascimento (3) From Pucci to Tasso, the Quattrocento and the Cinquecento. Prereq: 212 or consent of instructor.

404 The Modern Italian Short Story (3) Prereq: 212 or consent of instructor.

405 Modern Italian Poetry (3) Prereq: 212 or consent of instructor.

406 The Modern Italian Novel (3) Prereq: 212 or consent of instructor.

409 Directed Readings (3)

410 Italian Theatre (3) Survey of Italian theatre from Renaissance to present. Prereq: 212 or consent of instructor.

414 Italian Cultural Studies (3) This course will examine Italian culture as a set of practices characteristic of Italian society, from its mode of material production to its eating habits, dress codes, celebrations, and rituals. The objective of the course is to achieve a greater understanding of contemporary Italian culture.

421 Topics in Italian Literature and Cinema (3) Examination of Italian literature and cinema from 1930 to the present focusing on literary works translated into English and adapted into film. Objectives of the course are to investigate the relationship between literature and cinema and to achieve a greater understanding of Italian culture since 1930. Films will be shown in Italian with English subtitles. May be repeated. Maximum of 6 hours. (Same as Cinema Studies 421.)

490 Internship (1-15) Career-related experiences in the United States or abroad with permission of the Language and World Business Director. For Language and World Business majors only. Satisfaction/No Credit grading only.

493 Independent Study (1-15)

JAPANESE (589)

151-152 Elementary Japanese II (5,5) (Same as Asian Languages 151-152.)

251-252 Intermediate Japanese II (5,5) (Same as Asian Languages 251-252.)

313-314 Japanese Literature in English Translation (3,3) (Same as Asian Languages 313-314.)

351-352 Advanced Japanese II (4,4) (Same as Asian Languages 351-352.)

451 Readings in Japanese Literature (3) (Same as Asian Languages 451.)

JOURNALISM (594)


201 Writing for Mass Media (3) Principles and practice of news writing for print and broadcast media. Comprehensive overview of the major forms of writing for the mass media. Role of media in society. Not available for majors in the College of Communications.

203 Editing (3) Methods and practice in judging news, editing copy, writing headlines and designing newspapers and magazines. Emphasis on precise word use and news display.

280 Communication Graphics (3) Principles and practice in the visual aspect of communications. Emphasis on graphic design, typography, illustration and photography, printing and production techniques and publication design. Lecture and laboratory. Prereq: 200, or consent of instructor.

290 Photojournalism (3) Principles and practice of photography as a creative tool of communication. Basic camera technique, darkroom work, historical and contemporary photojournalism. Lecture and laboratory.

310 Feature Writing (3) Skills of journalism for writing feature articles for newspapers, magazines and company publications. Critiquing of students’ work in writing workshops, and writing short in-class pieces.


403 International Communication (3) Development and operations of world mass communications channels and agencies. Comparative analysis of media, media practices, flow of news throughout the world. Print and broadcast systems studied in terms of relevant social, political, economic, and cultural factors. Relation of communication practices to international affairs and understanding.

412 Opinion Writing (3) Analysis of editorial positions, practices, and pages. Writing editorials and columns for newspapers, magazines, and company publications, with emphasis upon study and use of rhetorical devices and logic. Prereq: 203 or consent of instructor.

414 Magazine Article Writing (3) Techniques of writing in-depth articles for mass circulation and specialized magazines. Organizing and presenting material, with attention to problems in areas such as business, science, agriculture, and the humanities. Prereq: 203 or consent of instructor.

416 Issues in Journalism (3) Topics vary. Prereq: Consent of instructor. May be repeated for a maximum of 8 hours.

420 Print Media Management (3) Current business practice among print news media, especially newspapers. Problems in management and production, and the outlook for new technologies. Prereq: 6 hours math and/or accounting, and senior standing.


433 Advanced Editing (3) Primary focus is on sensitivity to language and editing skills. Includes headline writing, layout and production. Prereq: 203.

444 Journalism as Literature (3) Study of writers from the 17th century to the modern era whose works have endured as both journalism and literature. An emerging genre called literary journalism will be examined as a means of cultural reporting with a personal narrative style. Prereq: Consent of instructor.

450 Writing about Science, Technology, and Medicine (3) Writing workshop to analyze examples of successful science writing and write series of articles for general public based on scientific journals, news conferences, technical meetings and interviews. Prereq: Consent of instructor. (Same as Information Sciences 450.)

451 Environmental Reporting (3) Writing for news media on such environmental issues as strip-mining, water pollution, air pollution, allergens, nuclear power, fossil fuel power, and solid wastes. Students hear presentations from and interview experts in environmental science and reporting. Exemplary popular literature in environmental reporting is reviewed. Prereq: 203 for majors; consent of instructor for non-majors.

455 Issues in Science Communication (3) Topics vary. Prereq: Consent of instructor. May be repeated for a maximum of 15 hours credit.

456 Science Writing as Literature (3) Survey of important science writing for the general public across the spectrum of science, engineering, and medicine. Works by authors such as Arthur C. Clarke, Stephen J. Gould, and Richard Selzer will be analyzed for literary qualities in a quest to understand why some science writing succeeds. Prereq: Consent of instructor.


465 Women and Mass Media (3) Media effects on women. Media coverage and portrayal of women. Historical and current status of women in mass communication industries. (Same as Women’s Studies 465.)

470 Sports Writing (3) Writing sports stories, features, and columns. Emphasis on developing story ideas; on gathering information by observing events, interviewing sources and examining documents; and on writing in a clear, concise manner and in a consistent style. Sports writing is considered from the standpoint of news reporters, sports information specialists, and others with an interest in sports cable channels and magazines.


491 Foreign Study (1-15) Advance approval of hours and topics by advisor required for registration. May be repeated for a maximum of 15 hours credit.

492 Field Experience (1-2) Approved internships and other supervised practice in journalism. Prereq: 360, senior standing, and consent of instructor. May be repeated for a maximum of 4 credit hours. Satisfaction/No Credit grading only.

493 Independent Study (3) Prereq: Consent of instructor. May be repeated for a maximum of 6 hours.

JUDAIC STUDIES (595)

311 Ancient Hebrew Religious Traditions (3) (Same as Religious Studies 311.)

312 Religious Aspects of Biblical and Classical Literature (3) (Same as Religious Studies 312.)
320 Women and Religion (3) (Same as Religious Studies 320 and Women’s Studies 320.)
322 Medieval Philosophy (3) (Same as Philosophy 322 and Medieval Studies 322.)
350 German-Jewish Topics in Literature and Culture (3) (Same as German 350.)
369 History of the Middle East (3) (Same as History 369.)
370 History of the Middle East (3) (Same as History 370.)
381 Introduction to Judaism (3) (Same as Religious Studies 381.)
382 History of Jewish Civilization I (3) (Same as History 382.)
384 History of Jewish Civilization II (3) (Same as History 384.)
385 Contemporary Jewish Thinkers (3, 3) Writing emphasis. May be repeated. Maximum 6 credit hours. (Same as Religious Studies 385.)
386 Voices of the Holocaust (3) (Same as Religious Studies 386.)
395 The Crusades and the Medieval Christian-Muslim Relations (3) (Same as History 395)
405 Modern Jewish Thought (3) (Same as Religious Studies 405.)
425 Early Christian and Byzantine Art, to 1350 (3) (Same as Art History 425.)
431 Medieval Art of the West, 800-1400 (3) (Same as Art History 431 and Medieval Studies 381.)
484 Studies in Jewish History (3) (Same as History 484.)

LATIN (257)
111-112 Beginning Latin (3,3) Must be taken in sequence. Not available to students eligible for Latin 150.
150 Latin Transition (3) This course is designed to prepare students for enrollment in Latin 251. Prereq: Two years of high school Latin and a score on the Latin placement exam below that required for admission to Latin 251. Since 150 is a review of elementary Latin, students who receive credit in this course may not also receive credit for any other 100 level Latin course and therefore also forfeit the six hours of elementary language credit awarded through placement examination.
251 Intermediate Latin: Grammar Review and Readings (3) Prereq: 112 or 150 or placement through the Latin placement examination.
252 Intermediate Latin: Vergil’s Aeneid (3) Prereq: 251 or equivalent.
351 Cicero and Sallust (3) Prereq: 252 or equivalent.
352 Roman Lyric Poetry (3) Poetry of Catullus, Horace, and the elegists. Prereq: 252 or equivalent.
414 Cicero and Techniques of Latin Prose Composition (3) For advanced students in Latin. Practice in prose composition, the writings of Cicero the model. Prereq: 351-352 or consent of instructor.
431-432 Selected Readings from Latin Literature (3,3) For advanced students in Latin. Oratory, historical writings and poetry of ancient Rome, in the original Latin. May be repeated for credit. Maximum 9 hours. Prereq: 351-352 or consent of instructor.
435 Medieval Latin (3) Selected readings from the Latin prose and poetry of medieval Europe. Prereq: Consent of instructor.

LATIN AMERICAN STUDIES (600)
251-252 Introduction to Latin American Studies (3,3) (Same as History 255-256)
311 Aspects of Luso-Brazilian Literature (3)
313 Peoples and Cultures of Mesoamerica (3) (Same as Anthropology 313.)
314 Peoples and Cultures of South America (3) (Same as Anthropology 314.)
315-316 Aspects of Luso-Brazilian Literature (3,3) (Same as Portuguese 315-316.)
319 Caribbean Cultures and Societies (3) (Same as Anthropology 319 and African and African-American Studies 319.)
331 Introduction to Hispanic Culture (3) (Same as Spanish 331.)
333 Survey of Spanish-American Literature: 1700 to Present (3) (Same as Spanish 333.)
334 Survey of Hispanic Literatures: Beginnings-S1700 (3) (Same as Spanish 334.)
360 History of Latin America (3) (Same as History 360.)
361 History of Latin America (3) (Same as History 361.)
372 Geography of Middle America (3) (Same as Geography 372.)
373 Geography of South America (3) (Same as Geography 373.)
401 Cultural Plurality and Institutional Changes in Latin America (3) (Same as Spanish 401.)
402 Latin American Studies Seminar (3) (Same as Spanish 402.)
431 Topics in Literature and Language of the Portuguese Speaking World (3) (Same as Portuguese 431.)
432 Topics in the Literature and Language of the Portuguese Speaking World (3) (Same as Portuguese 432.)
456 Latin American Government and Politics I (3) (Same as Political Science 456.)
460 History of Brazil (3) (Same as History 460.)
461 Cuban Revolution in Historical Perspective (3) (Same as History 461.)
462 History of Mexico (3) (Same as History 462.)
463 Modern Latin American History in Film (3) (Same as History 463.)
465 Latin American Film and Culture (3) (Same as Spanish 465 and Cinema Studies 465.)
475 Studies in Latin American History (3) (Same as History 475.)
479 Disenchanted Texts in Hispanic Literature (3) (Same as Spanish 479.)
491 Foreign Study (1-15)
492 Off-Campus Study (1-15)
493 Independent Study (1-15)

LEGAL STUDIES (617)
300 Mass Communication Research Methods (3) (Same as Communication 300.)
301 The Legal Environment of Business (3) (Same as Business Law 301.)
330 Law in American Society (3) (Same as Political Science 330.)
331 Sociological Research (3) (Same as Sociology 331.)
340 Women, Politics, and the Law (3) (Same as Women’s Studies 340.)
344 Professional Responsibility (3) (Same as Philosophy 344 and Religious Studies 344.)
362 Roman Law (3) (Same as Classics 362.)
392 Philosophy of Law (3) (Same as Philosophy 392.)
400 Mass Communication Law and Ethics (3) (Same as Communication 400.)
401 Political Analysis (3) (Same as Political Science 401.)
430 United States Constitutional Law: Sources of Power and Restraint (3) (Same as Political Science 430.)
431 United States Constitutional Law: Civil Rights and Liberties (3) (Same as Political Science 431.)
435 Criminal Law and Procedure (3) (Same as Political Science 435.)
442 Administrative Law (3) (Same as Political Science 442.)
451 Criminal Justice (3) (Same as Sociology 451.)
455 Society and Law (3) (Same as Sociology 455.)
469 Freedom of Speech (3) (Same as American Studies 469 and Speech Communication 469.)
470 International Law (3) (Same as Political Science 470.)
490 Language and Law (3) (Same as English 490.)
496 The Rhetoric of Legal Discourse (3) (Same as English 496.)

LINGUISTICS (623)
200 Language, Linguistics and Society (3) Introduction to linguistics with focus on language development and use of language by individuals and groups. Prereq: Completion of Freshman English or equivalent.
371 Foundations of the English Language (3) (Same as English 371.)
372 The Structure of Modern English (3) (Same as English 372.)
400 Topics in Linguistics (3) Content varies. May be repeated. Maximum 6 hours.
411 Linguistic Anthropology (3) (Same as Anthropology 411.)
423 The Development of Diachronic and Synchronic Linguistics (3) Development of Western linguistic thought from the Hebrews and Greeks through modern times. Readings from Boas, Sapir, Bloomfield, and others. Prereq: 9 hours of courses required for the Linguistics major (300-level or above) or consent of instructor.
425 Introduction to Descriptive Linguistics (3) (Same as French 425, German 425, Russian 425, and Spanish 425.)
426 Methods of Historical Linguistics (3) (Same as French 426, German 426, Russian 426, and Spanish 426.)
429 Romance Linguistics (3) (Same as French 429 and Spanish 429.)
431 Topics in Hispanic Linguistics (3) (Same as Spanish 430.)
435 Structure of the German Language (3) (Same as German 435.)
436 History of the German Language (3) (Same as German 436.)
471 Sociolinguistics (3) (Same as English 471 and Sociology 471.)
472 American English (3) (Same as English 472.)
474 Teaching English as a Second or Foreign Language I (3) (Same as English 474.)
475 Teaching English as a Second or Foreign Language II (3) (Same as English 475.)
476 Second Language Acquisition (3) (Same as English 476.)
477 Pedagogical Grammar for ESL Teachers (3) (Same as English 477.)
485 Special Topics in Language (3) (Same as English 485.)
490 Language and Law (3) (Same as English 490.)
491 Foreign Study (1-15)
492 Off-Campus Study (1-15)
493 Independent Study (1-15)
LOGISTICS AND TRANSPORTATION (624)

310 Intermediate Logistics (3) The concepts, principles, and methods used to plan, organize, and manage logistics activities including customer service, order processing and information flow, transportation, warehousing, purchasing, inventory, and network design. Prereq: Business Administration 331.

400 Special Topic in Logistics and Transportation (3-6) Seminar in current problem area in logistics and transportation. Topic announced prior to offering. Prereq: Consent of instructor. May be repeated once for additional credit provided topic is different. Maximum 6 hours.

411 Logistics and Transportation Analytical Methods I (2) Introduction to the principle analytical tools and models used in logistics and transportation; applications of analytical tools to logistics and transportation problems; using analytical methods to support negotiations. Prereq: 310.

412 Logistic and Transportation Analytical Methods II (3) Models and modeling systems with applications to strategic, tactical, and operational supply chain problems. Prereq: 411.

421 Strategic Sourcing (2) The fundamentals of procurement and purchasing within the context of an integrated supply chain. Approaches and methods for realizing a competitive advantage and improved profitability from the procurement and sourcing process. Prereq: 310.

441 Global Logistics and Transportation (2) Multinational logistics strategy, import-export process, global sea, surface and air operations comparative transport systems analysis. Prereq: 310.

460 Supply Chain Strategy in a Global Environment (3) Senior seminar in development of strategy for logistics and transportation in a supply chain perspective. Prereq: 411, 421, 441.

492 Logistics and Transportation Off-Campus Study (1-6) Satisfactory/No Credit grading only. Prereq: Consent of instructor.

493 Independent Study (1-6) Directed research on subject of mutual interest to student and staff member. Prereq: Consent of instructor. May be repeated. Maximum 6 credit hours.

MANAGEMENT (625)

300 Organizational Management (3) Not for Business majors. The study of the theories of organizations and the practice of management within them. Prereq: Business Administration 201 and senior standing.

321 Organizational Structure and Behavior (3) Behavioral processes in organizations; motivation, leadership, decision making, communication; behavioral consequences; group behavior, informal organizations, organizational structure, conflict, politics, change and development. Prereq: Business Administration 341.


401 Business Strategy/Policy (3) Strategy and policy which affect the character and success of the total enterprise. Capstone course which integrates all functional areas in the formulation and implementation of strategy which will enable the organization to reach objectives. Major writing requirement. Prereq: Completion of business core courses and senior standing. Must be admitted to a business major.

410 Management Science (3) Introduction to quantitative decision models and their integration into microcomputer-based decision support systems. Topics include linear dynamic and network programming, as well as decision analysis, Markov, inventory and queuing models, and simulation techniques. Prereq: Consent of instructor.

411 Labor Relations and Collective Bargaining (3) American labor history, structure and philosophy of contemporary unions, nature of collective bargaining, and dispute settlement.

421 Total Quality Management (3) TQM is characterized by three main principles: customer focus, continuous improvement, and teamwork. Course focuses on the managerial perspective that is necessary to successfully implement and sustain a TQM philosophy, while briefly introducing its underlying statistical concepts. Prereq: Statistics 201, Business Administration 341.

431 Human Resource Management I (3) Theory, methods, and issues pertaining to successful personnel management. Prereq: Business Administration 341, senior standing.

432 Human Resource Management II (3) Methods of identifying, developing, implementing, and evaluating various personnel programs. Prereq: 431, senior standing.

440 Organizational Psychology (3) (Same as Psychology 440.)

441 Operations Management II (3) Planning and control of operations systems. Aggregate planning, scheduling systems, materials management. Prereq: 341.

471 International Management (3) Factors significant to the manager in international business activities.

492 Management Off-Campus Study (1-6) Satisfactory/No Credit grading only. Prereq: Consent of Instructor.

493 Independent Study (3) Readings, research, and special projects. Prereq: Consent of instructor. May be repeated one time for credit.

MARKETING (632)

300 Marketing and Supply Chain Management (3) Not for Business majors. Practical applications oriented overviews of how every manager needs to know in order to effectively provide value to customers of the organization, and improve long-term performance through the systematic, strategic coordination of traditional business functions within a particular company and across businesses. Prereq: 300; not for business majors.

310 Buyer Behavior—Analysis for Marketing (3) Comprehensive framework of consumer behavior concepts and processes. Application to market analysis, design and control of marketing programs. Prereq: 300; not for business majors.

340 Marketing Strategy Frameworks (3) Examines the marketing strategies that customer focused organizations use to acquire and retain customers. Students learn skills needed to create and implement these strategies. Topics include market opportunity analysis, marketing strategy planning, segmentation and targeting decisions, value positioning decisions, customer focused strategies (e.g., Integrated Marketing Communication, brand equity, Customer Relationship Management), and translation of customer learning into marketing strategy. Prereq: Business Administration 332.

350 Customer Value Analysis (4) Examines how organizations gather, analyze, and interpret data needed by managers to learn about customers in markets. Students learn how to organize data into customer databases and how to analyze those databases to learn about customers. Topics include selected consumer/customer behavior theories, customer value determination, selected market research techniques, and customer database management techniques. Prereq: 340. Marketing major and co-concentration students only: 350 is a pre-requisite or co-require for 452, 454, 456, 458.

400 Special Topics in Marketing (3) Topics of current interest in marketing. Topic announced prior to offering. Prereq: Business Administration 332. May be repeated once for additional credit provided topic is different. Maximum 6 hours.

452 Product/Service Management (3) Examines how organizations value customers through product and service strategies. Topics in product management include new product development, design and lifecycle, product life cycle, product mix management, and brand management. Topics in services management include service design, service delivery, service quality/productivity, service failure/recovery, and role of technology. Prereq: 340. Note: Marketing major and co-concentration students only: 350 is a pre-requisite or co-require for 452.

454 Channels Management (2) Examines how organizations deliver value to customers through distribution strategies. Topics will include channel design, channel management, channel conflicts, communication and conflict management, and retail/wholesale management strategies. Prereq: 340. Note: Marketing major and co-concentration students only: 350 is a pre-requisite or co-require for 454.

456 Integrated Marketing Communications Management (6) Examines how organizations communicate value to customers. Communication topics will be presented in the framework of an Integrated Marketing Communication strategy. Topics will include advertising management, sales promotion, publicity and public relations, sponsorship marketing, direct marketing and e-marketing. Prereq: 340. Note: Marketing major and co-concentration students only: 350 is a pre-requisite or co-require for 458.

485 Sales Force Management (2) Examines how organizations communicate value to customers through face-to-face selling. Focuses on the activities and problems of sales representatives and first line sales managers. Topics include the selling process, sales force organization, recruiting, motivating, forecasting, territorial design, and evaluation. Prereq: 340. Note: Marketing major and co-concentration students only: 350 is a pre-requisite or co-require for 458.

492 Marketing Off-Campus Study (1-6) Satisfactory/No Credit grading only. Prereq: Consent of instructor.

493 Independent Study (1-6) Directed research on subject of mutual interest to student and staff member. Prereq: Consent of instructor. May be repeated. Maximum six hours credit.

497 Honors I (3) Topics may include nonbusiness marketing applications, macroenvironmental issues, market segmentation, international marketing, services marketing, marketing channels and related issues. Prereq: Consent of instructor.

MATERIALS SCIENCE AND ENGINEERING

See Engineering Materials Science.

MATHEMATICS (641)

100 Intermediate Algebra (3) First degree equations and inequalities, polynomials, rational expressions, exponents, graphing, second degree equations and inequalities, systems of equations, introduction to exponential and logarithmic functions. The course is designed to prepare students for enrollment in Mathematics 110, 115, 119, 130, 201, and 302. Course does not count toward the total number of hours required for graduation, nor does it fulfill any mathematics requirement. A, B, C, No Credit grading.

109 Algebra Workshop (1) Self-paced tutorial center for students taking 119, 130, or 141 who need additional help (as determined by placement exams, assessment exams, or classroom performance). Individual and computerized instruction in selected algebraic skills. To receive credit, a student must pass the 119, 130, or 141 class in which he/she is currently enrolled. May be taken for credit three times. Satisfactory/No Credit grading only.

101 Intermediate Algebra (3) First degree equations and inequalities, polynomials, rational expressions, exponents, graphing, second degree equations and inequalities, systems of equations, introduction to exponential and logarithmic functions. The course is designed to prepare students for enrollment in Mathematics 110, 115, 119, 130, 201, and 302. Course does not count toward the total number of hours required for graduation, nor does it fulfill any mathematics requirement. A, B, C, No Credit grading.
Algebra of sets, functions, relations, calculus. Prereq: 142 or 148.

19 College Algebra (3) A review of algebraic functions, equations, and inequalities for students who satisfy the course prerequisites for 123 or 125 but whose placement test scores indicated additional preparation is necessary. Students who receive a grade of C or better in any course numbered 123 or higher (except for 201 or 202) may not subsequently receive credit for 119. Prereq: Two years of algebra and one year of geometry and either satisfactory placement test scores or Mathematics 100. This course should not be taken to remove an entrance requirement.

123 Finite Mathematics (3) For students not planning to major in the physical sciences, engineering, mathematics, or computer science. Exponential and logarithmic functions, interest and annuities, linear systems and matrices, optimization. Prereq: Two years of algebra and one year of geometry in high school plus satisfactory placement test score, or 119 or 130.

125 Basic Calculus (3) For students not planning to major in the physical sciences, engineering, mathematics, or computer science. Calculus of algebraic, exponential, and logarithmic functions, with applications. No student who has received credit for 141 or 152 with a grade of C or better may subsequently receive credit for 125. Prereq: Two years of algebra and one year of geometry in high school plus satisfactory placement test scores, or 119 or 130.

130 Precalculus I (4) Review of algebraic, logarithmic, exponential, and trigonometric functions. Students who satisfy the course prerequisites for 141 or 151, but whose placement test scores indicate additional preparation is necessary. Students who have earned a grade of C or better in 141 or 151 may not subsequently receive credit for 130. Prereq: Two years of algebra, a year of geometry, and half a year of trigonometry in high school. Students who did not study trigonometry in high school may take the noncredit course in trigonometry simultaneously with 130.

141-142 Calculus I, II (4,4) Standard first-year course in single variable calculus, especially for students of science, engineering, mathematics, and computer science. Differential and integral calculus with applications. Prereq: Two years of algebra, a year of geometry, and half a year of trigonometry in high school, plus satisfactory placement test scores, or 119 or 130.

147-148 Honors: Calculus I, II (4,4) Honors version of 141-142 for well-prepared students who are usually invited to enroll, but inquiries from other students having excellent high school mathematics backgrounds are welcome. Credit will not be given for both 147 and 141 or 152.

151-152 Mathematics for the Life Sciences I, II (3,3) For students majoring in the Life Sciences. Does not serve as a prerequisite for 231 or 241. Topics include: descriptive statistics, linear regression, discrete probability, matrix algebra, difference equations, calculus, and differential equations. Emphasis on applications in the life sciences. Includes computer projects. Prereq: Two years of algebra, a year of geometry, and half a year of trigonometry in high school, plus satisfactory placement test scores, or 130.

171 Computer Literacy for Mathematics (3) Introduction to computers, the internet, mathematical packages and programming for prospective mathematics majors. Prereq. 141.

200 Matrix Computations (1) Introduction to matrix calculations, including determinants, eigenvalues, and eigenvectors. For students in the College of Engineering and College of Business Statistics majors only. Prereq. 241 or 247. Students who have received a grade of C or better in 251 may not subsequently receive credit for 200.

201 Structure of the Number System (3) Problem solving, sets and relations, numeration systems, integers, elementary number theory, rational numbers and decimals. Prereq: Two years of algebra and one year of geometry in high school and satisfactory placement test score.

202 Probability, Statistics, and Euclidean Geometry (3) Probabilities in simple experiments, measures of central tendency and variation. Basic plan and three-space geometry, congruence and similarity, constructions with compass and straightedge, transformations, area and volume measurement. Turtle graphics. Prereq: Two years of algebra and one year of geometry in high school and satisfactory placement test score.


241 Calculus III (4) Calculus of functions in two or more dimensions. Includes solid analytic geometry, partial differentiation, multiple integration, and selected topics in vector calculus. Prereq. 142 or 148.

247 Honors: Calculus III (4) Prereq. 147-148 or invitation of the department.

251 Matrix Algebra I (3) First course in the algebra of simultaneous linear equations and matrices. Includes determinants, elimination, determinants, vector spaces, linear transformations, eigenvalues, and eigenvectors. Prereq. 141-142.

257 Honors: Matrix Algebra I (3) Prereq. 148 or invitation of the department.

299 Studies in Mathematics (1-3) Prereq: Consent of instructor. May be repeated. Maximum 9 hours.

300 Introduction to Abstract Mathematics (3) Algebra of sets, functions, relations, mathematical induction, algebraic structure of the real number system, order properties, and completeness. Prereq. 142.

323 Probability and Statistics (3) Discrete and continuous random variables; conditional probability, expectation, moment generating functions; law of large numbers, central limit theorem. Elements of statistical inference, estimation, and hypothesis testing. Prereq. 241 or 247) and 300.

341 Analysis I (3) Introduction to the theory of the real number system, limits of sequences, and functions of a real variable. Prereq. 241 or 247 and 300.

351 Algebra I (3) Introduction to abstract algebra, emphasizing integers and polynomial rings. Prereq. 251 or 257 and 300.

371 Numerical Algorithms (3) Development and application of fundamental algorithms for finding roots of equations, solving systems of linear equations, interpolating, fitting data using least-squares, differentiation, integration, and solving ordinary differential equations. Prereq: A high level programming language (e.g., 171 or Computer Science 102), 231, 241 or 247, and basic matrix algebra (e.g., 200 or 251 or 257).

381 Studies in Mathematics (1-3) Prereq: Consent of instructor. May be repeated. Maximum 9 hours.

400 History of Mathematics (3) Development of major ideas in mathematics from ancient to modern times and the influence of these ideas in science, technology, philosophy, art, and other areas. Prereq. 251 (or 257) and 300. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

401 Mathematics and Microcomputers (3) Primarily for students seeking certification as mathematics teachers at the secondary level. The use of microcomputers to study concepts and problems in mathematics. Does not satisfy major requirements for a Bachelor of Science or Master of Science in Mathematics. Prereq. 141 or 147.

403 Mathematical Methods for Engineers and Scientists (3) Matrix computations, numerical methods, partial differential equations, Sturm-Liouville Theory and special functions as used in engineering and science. Does not satisfy major requirements for a Bachelor of Science or Master of Science in Mathematics. Prereq. 231, 241, and familiarity with computer programming system and a programming language (e.g., 171 or Computer Science 102).

404 Applied Vector Calculus (3) Topics from multivariable and vector calculus including line and surface integrals, the divergence theorem and the theorems of Gauss and Stokes. Prereq. 241 or 247.

405 Models in Biology (3) Difference and differential equation models of biological systems. Prereq. 142 or 148 or 152.

411 Mathematical Modeling (3) Construction and analysis of mathematical models used in science and industry. Projects emphasized. Prereq. 231, 241, and 251 or 257. Writing-emphasis course.

421 Combinatorics (3) Introduction to problems of construction and enumeration for discrete structures such as sequences, partitions, graphs, finite fields and geometries, and experimental designs. Prereq. 323 or consent of instructor.

423 Probability I (3) Axiomatic probability, multivariate distributions, conditional probability and expectations, methods of moment generating/characteristic functions. Laws of large numbers and the central limit theorem. Prereq. 300-level probability or consent of instructor.

424 Probability II (3) Elements of stochastic processes: Random walk, Markov chains and Poisson processes. Other topics as selected by the instructor. Prereq. 423 or consent of instructor.

425 Statistics (3) Derivation of standard statistical distributions including t, F and X2; independence of sample mean and variance; basic limit theorems; point and interval estimation, Bayesian estimates; statistical hypotheses, Neyman-Pearson theorem; likelihood ratio and other parametric and nonparametric tests; sufficient statistics. Prereq. 423 or consent of instructor.


443 Complex Variables (3) Introduction to the theory of functions of a complex variable, including residue theory and contour integrals. Prereq. 241 or 247.

445-446 Advanced Calculus I, II (3,3) Introduction to the theory of sequences, series, differentiation, and Riemann integration of functions of one or more variables. Prereq. 241 or 247 and 300, or consent of instructor.

447-448 Honors: Advanced Calculus I, II (3,3) Honors version of 445-446. Prereq. 241 or 247, and consent of instructor.

453 Matrix Algebra II (3) Advanced topics in matrix theory, including the Jordan canonical form. Prereq. 251 or 257.

455-456 Advanced Algebra I, II (3,3) Advanced topics in algebraic structures such as groups, rings, fields, vector spaces and linear transformations. Prereq. 251 (or 257) and 300, or consent of instructor.

458 Honors: Abstract Algebra I, II (3,3) Honors version of 455-456. Prereq. 251 (or 257) and 300, or consent of instructor.

460 Geometry (3) Axiomatic and historical development of neutral, Euclidean, and hyperbolic geometry stressing proof technique and critical reasoning. Models of Non-Euclidean geometries. Prereq. 300, or consent of instructor.

461 Topology (3) Includes topology of line and plane, separation properties, compactness, connectedness, continuous functions, homeomorphisms, compactness, and topological invariants. Prereq. 241 (or 247) and 300, or consent of instructor.

471 Numerical Analysis (3) Introduction to computation, instabilities, and rounding.
Interpolation and approximation by polynomials and piecewise polynomials. Quadrature and numerical solution of initial and boundary value problems of ordinary differential equations, including stiff systems. Prereq: 371 or consent of instructor. (Same as Computer Science 471.)


475 Industrial Mathematics (3) Modeling, analysis, and computation applied to scientific/technical/industrial problems. Prereq: 231 and familiarity with an operating system and a programming language (e.g., 171, 371, or Computer Science 102).

490 Readings in Mathematics (1-3) Open to superior students with consent of department head. Independent study with faculty guidance. May be repeated. Maximum 9 hours. Prereq. Agreement of faculty mentor to supervise independent work.

495 Seminar in Actuarial Mathematics (1-3) Introduction to principles and problem solving techniques in actuarial sciences with emphasis on the mathematical topics included in the initial Actuarial Exams. Prereq: 241, 251, and 323.

499 Seminar in Mathematics (1-3) Topics will vary. Will require out-of-class projects and in-class presentations by students. Students must register for the number of credit hours announced for a particular seminar. May be repeated. Maximum 9 hours. Prereq. Consent of instructor.

MATHMATICS EDUCATION (642)

485 Teaching of Mathematics, Grades 7-12 (3) Preparation of teaching plans, evaluation, materials for teaching mathematics; teaching simulation and directed observation in schools. Prereq: Admission to Teacher Education Program.

MECHANICAL ENGINEERING

See Engineering Mechanical.

MEDICAL TECHNOLOGY (669)

Courses are open only to qualified students who have completed the first three years of the Medical Technology curriculum.


420-421 Clinical Chemistry (5,5) Clinical aspects of biochemistry, including overview of principles and instrumentation with emphasis on practical laboratory application of analytical procedures, specimen collection and handling, significance of results, and quality assurance. Includes blood gas analysis, including radioimmunoassay, and analysis of blood and other body fluids for enzymes, hormones, and other constituents of clinical interest, utilizing both automated and manual techniques, physical characteristics, detection, and use of short half-life radioactive materials for in vivo procedures such as radioimmunoassay which utilize radionuclides.

430-431 Hematology and Clinical Microscope (4,4) Principles, theories, and instrumentation related to qualitative and quantitative evaluation of cellular elements of blood and other body fluids; factors of hemostasis, quantitative chemical analysis of urine and renal function studies. Emphasis on microscopic identification of cells and the significance and correlation of laboratory data.


450 Clinical Serology and Immunology (2) Performance and interpretation of breadth range of clinical serological and immunological procedures with emphasis on principles and clinical correlation. Formal lecture series included.

470 Orientation and Basic Techniques (1) For facilitation of students from campus to hospital community and clinical laboratory. Introduction to medical terminology, ethics, and health team concept. Orientation to basic techniques including procedures for collection and handling of specimens, principles of operation of many laboratory instruments, review of laboratory math, and introduction to quality control procedures. Portions of course extend over entire clinical year.

480 Principles of Supervision and Education in Medicine (1) Seminars in basic principles of management, supervision, and education theories and methods. Comprehensive examination covers entire course.

MEDIEVAL STUDIES (674)

201-202 Medieval Civilization (3,3) Introduction to basic themes in the medieval experience, approached from interdisciplinary points of view and including philosophy and religion, art and architecture, language and literature, social and political history. Writing-emphasis course.

261 Medieval Culture: Readings from the Early Middle Ages, 500-1000 (3) Critical analysis and interpretation of selected works from the early medieval period. Focuses on major topics of literature produced during the period 500-1000 A.D., e.g., cultural, religious, rhetorical, lyric, epic, biographical. Includes Augustine’s Confessions, Boethius’ Consolation, St. Gregory’s Life of St. Benedict, The Life of Charlemagne, etc. Writing-emphasis course.

262 Medieval Culture: Readings from the Later Middle Ages, 1000-1500 (3) Critical analysis and interpretation of selected works from the later medieval period. Focuses on romantic, allegorical and mystical writings from the high and later Middle Ages, e.g., the Song of the Nibelungen, the Romance of the Rose, St. Bernard’s Commentary on the Song of Songs, Peter Abelard’s History of My Calamities. Should be taken in sequence with 261. Writing-emphasis course.

312-313 Medieval History (3,3) (Same as History 312-313.)

322 Medieval Philosophy (3) (Same as Philosophy 322 and Judaic Studies 322.)

372 Northern European Painting, 1350-1600 (3) (Same as Art History 441.)

381 Medieval Art of the West, 800-1400 (3) (Same as Art History 431.)

382 The Art of Italy, 1250-1450 (3) (Same as Art History 451.)

401 Dante and Medieval Culture (3) (Same as Italian 401.)

402 Petrarch and Boccaccio (3) (Same as Italian 402.)

403 Seminar in Medieval Studies (1-3) Interdisciplinary treatment of selected topics. Content varies. May be repeated. Writing-emphasis course.

405 Medieval Literature (3) (Same as English 401.)

406 Chaucer (3) (Same as English 402.)

410 Medieval French Literature (3) (Same as French 410.)

415 Medieval Architecture (3) (Same as Architecture 415.)

475 Ancient and Medieval Political Thought (3) (Same as Political Science 475.)

491 Foreign Study (1-15)

492 Off-Campus Study (1-15)

493 Independent Study (1-15)

MICROBIOLOGY (684)

210 General Microbiology (3) General properties of bacteria and viruses including physiology, metabolism, genetics, applied bacteriology, pathogenesis, and immunity. May not be used as part of the major in microbiology. 2 hours and 2 labs.

310 Introduction to Microbiology (3) Introduction to bacteria and viruses including physiology, metabolism, and genetics of bacteria and replication and expression of viruses; bacterial and viral pathogenicity; mechanisms of resistance to disease. Prereq: Biology 140. Coreq: Biology 240.

319 Introductory Microbiology Laboratory (2) Practical techniques for the examination, cultivation, and identification of microorganisms. Coreq: 310.

320 Advanced Microbiology (3) Cell and molecular biology of microorganisms, principles and applications in modern technological society. Intended for Microbiology majors. Prereq: 310.

329 Advanced Microbiology Laboratory (2) Laboratory exercises designed to accompany 320. Prereq: 319. Coreq: 320.

400 Laboratory Problems in Microbiology (2-4) Research projects under the direction of a faculty member. May not be used for credit toward requirements for a major. Prereq: Consent of instructor. May be repeated. Maximum 9 hours. Satisfactory/No Credit grading only.

401 Undergraduate Research in Microbiology (3) Research experience in laboratory of faculty member with faculty committee guidance. Prereq: Junior or senior standing, 310-319-320-329, 3.2 minimum grade point average in all course work, consent of department head.

402 Microbiology Senior Honors Thesis (4) Supervised research, preparation and presentation of the senior honors thesis. Prereq: Senior standing, 401, 3.2 minimum grade point average in all course work and 3.5 in Microbiology courses, and consent of department head.

410 Bacterial Physiology (3) Modern concepts of the structure and function of the bacterial cell. Prereq: 310.


420 Medical Microbiology (3) Disease producing microorganisms including bacteria, rickettsia, chlamydia and fungi. Prereq: 310.

429 Medical Microbiology Laboratory (2) Laboratory exercises in medically important area of microbiology including microorganisms, pathogenesis and immunology. Prereq: 319, 430. Coreq: 420.

430 Immunology (3) Principles of inflammation and immunity; immunoglobulin structure and theories of formation and diversity; complement, hypersensitivities, cell cooperation and recognition in immune mechanisms; soluble factors. Prereq: Biology 240.


491 Foreign Study (1-15)

492 Off-Campus Study (1-15)

493 Independent Study (1-15)

495 Senior Seminar (3) In-depth consideration of microbiological problems of current interest requiring an integration of two or more disciplines. Emphasis on original literature and the experimental basis of current knowledge. Historical background, impact on society, predictions of the future, and the basis of moral and ethical judgements. Written reports required. Prereq. 320 and Senior standing. May be repeated. Maximum 6 hours. Only 3 hours may be counted toward the major. A capstone course. Writing-emphasis course.
MILITARY SCIENCE AND LEADERSHIP (689)

101 Foundations of Officer (2) Discusses organization and role of the Army. Emphasis is placed on topics in leadership and communication. Analyzes Army values and expected ethical behavior. Adventure training skills lab introduces land navigation, rifle marksmanship, mountaineering, and optional field-training exercises. Letter grade only.

102 Basic Leadership (2) Develops basic skills that underlie effective problem solving. Examines leadership styles that influence leader and group effectiveness. Emphasizes communications skills to include active-listening and feedback techniques. Adventure training skills lab introduces land navigation, rifle marksmanship, mountaineering, and optional field-training exercises. Letter grade only.

103 Advanced OTCh Fitness Program (1) Develops individual muscular strength, muscular endurance, and cardio-respiratory endurance. Classes are divided into groups based on ability and exercises are geared toward personal improvement. Primary evaluation is the Army Physical Fitness Test which consists of push-ups, sit-ups and a two-mile run. May be repeated. Maximum 8 times. Letter grade only.

200 Leader’s Training Course (4) A 28-day leadership practicum at Fort Knox, Kentucky. Familiarizes students with Army physical fitness, land navigation, rifle marksmanship, and military problem-solving/decision-making.

201 Individual Leadership Studies (3) Develops knowledge of self, self-confidence, and individual leadership skills. Concentrates on problem-solving and critical thinking skills. Emphasizes communication skills such as feedback and conflict resolution. Adventure training skills lab introduces land navigation, rifle marksmanship, mountaineering, and optional field training exercises. Letter grade only.

202 Leadership and Teamwork (3) Focuses on self-development through understanding of self and others. Includes topics that address leadership through group projects and historical case studies. Adventure training skills lab introduces land navigation, rifle marksmanship, mountaineering, and optional field training exercises. Prereq: 201 or consent of the Professor of Military Science and Leadership. Letter grade only.

301 Leadership and Problem Solving (4) Examines the basic skills that underlie effective problem solving. Analyzes the role of Army officers played in the transition of the Army from Vietnam to the 21st century. Instruction on analyzing and planning military operations. Emphasis on small unit tactics with a concentration on squad battle drills. Lab practicum concentrates on competency in land navigation, rifle marksmanship, and small-unit operations. Prereq: United States citizen or pursuing citizenship; minimum of 55 credit hours passed and at least two years remaining to complete degree (undergraduate or graduate); physically qualified; cumulative GPA 2.00 or higher; legally qualified; 3 or 4 years of ROTC or completion of 101, 102, 201, 202 or completion of 200 or completion of basic training. Letter grade only. 3 hours and 1 hour lab.

302 Leadership and Ethics (4) Probes leader responsibilities that foster an ethical community. Analyzes principles of effective writing and oral communication. Builds on previous instruction in order to further develop leadership competencies. Lab practicum concentrates on preparation for Military Science and Leadership 400 National Advanced Leaders Camp. Emphasis on land navigation, rifle marksmanship, and small unit operations. Prereq: 301. Letter grade only.

303 Military History (3) Primary emphasis on 21st Century warfare. Examines critical thinking in the study of military history and the relevance of military history to the modern day professional soldier. Provides framework for lifetime study of military history. Prereq: ROTC Adv. Class Course Student (101, 102, 201 and 202) or consent of the department head, Military Science and Leadership. Letter grade only.

400 National Advanced Leaders Camp (4) A 31-day leadership practicum held at Fort Lewis, Washington. Students are evaluated in various leadership positions, rifle marksmanship, land navigation, field leadership reaction course, and tactical small unit leadership. Prereq: 301, 302, 400. Letter grade only.

401 Leadership and Management (4) Discusses Army staff organization, functions, and processes. Analyzes counseling responsibilities and methods. Examines principles of subordinate motivation and organizational change. Applies leadership and problem-solving principles to case studies and exercises. Prereq: 301 and 302, 400 or consent of instructor. Letter grade only. 3 hours and 1 hour lab.

402 Officership (4) A capstone course designed to explore topics relevant to second lieutenants entering the Army. Examines common platoon leader actions. Discusses leader responsibilities and actions that foster an ethical command climate. Familiarizes students with Army administrative and logistics management functions. Examines legal aspects of decisionmaking and leadership. Prereq: 301, 302, 400, and 401 or consent of instructor. Letter grade only. 3 hours and 1 hour lab.

430 U.S. Military History, 1754 to the present (3) (Same as History 451.)

493 Military Leadership Topics (1) Topics on principles and styles of military leadership. Students conduct an in-depth profile of a contemporary or historic military leader. May be repeated. Maximum 4 hours. Letter grade only. Prereq: Consent of instructor.

MUSIC EDUCATION (707)

200 Conducting Laboratory (1) A laboratory course designed to afford conducting opportunities for student conductors and to acquaint students with a variety of music literature. May be repeated. Can be taken as elective credit by any student except those registered for 310 and 320. Letter grade only.

201 Field Experience in General Music (4) Observing and assisting in an approved elementary or middle school classroom. May be repeated. Maximum 3 hours. Satisfactory/ No Credit grading only.

211 Class Woodwind Methods II (1) Structure, use, techniques of playing, care and repair of the flute in school instrumental organizations. Emphasis on techniques necessary for basic understanding and effective teaching of the instruments. Practical use of current instructional materials. May be repeated. Letter grade only.

212 Class Woodwind Methods III (1) Structure, use, techniques of playing, care and repair of the oboe and bassoon in school instrumental organizations. Emphasis on techniques necessary for basic understanding and effective teaching of the instruments. Practical use of current instructional materials. May be repeated. Letter grade only.

220 Class Brass Methods (1) Structure, use, techniques of playing, care and repair of the Trumpet instruments in school instrumental organizations. Emphasis on techniques necessary for basic understanding and effective teaching of the instruments. Practical use of current instructional materials. May be repeated. Letter grade only.

221 Class Brass Methods II (1) Structure, use, techniques of playing, care and repair of the French horn instruments in school instrumental organizations. Emphasis on techniques necessary for basic understanding and effective teaching of the instruments. Practical use of current instructional materials. May be repeated. Letter grade only.

230 Class Percussion Methods I (1) Structure, use, techniques of playing, care and repair of principal instruments in school instrumental organizations. Emphasis on techniques necessary for basic understanding and effective teaching of the instruments. Practical use of current instructional materials. May be repeated. Letter grade only.

231 Class Percussion Methods II (1) Ethnic instruments, marching percussion trends and concepts, percussion literature and teaching concepts, traditional and non-traditional percussion accessories, steel drums. Letter grade only.

240 Class String Methods I (1) Structure, use, techniques of playing, care and repair of upper string instruments in school instrumental organizations. Emphasis on techniques necessary for basic understanding and effective teaching of the instruments. Practical use of current instructional materials. May be repeated. Letter grade only.

241 Class String Methods II (1) Structure, use, techniques of playing, care and repair of lower string instruments in school instrumental organizations. Emphasis on techniques necessary for basic understanding and effective teaching of the instruments. Practical use of current instructional materials. May be repeated. Letter grade only.

250 Functional Piano for Teachers (1) Practical piano skills for the general/vocal teacher who does not have a keyboard instrument as the applied principal. Transposition, improvisation, reading open vocal scores, simple accompaniments. May be repeated once for credit.

260 Eurythmics (1) Principles and practice of eurythmics, as developed by Emile Jaques-Dalcroze. Prereq: Consent of instructor. May be repeated once for credit. Maximum 2 credit hours. Letter grade only.

300 Music for Elementary Teachers (2) Singing, rhythmic activities, instrumental activities, listening, music reading, and creative activities appropriate for the elementary grades. For elementary education majors only. Prereq: Admission to Teacher Education Program. Letter grade only.

310 Conducting I (3) Basic skills of conducting: baton, time beating of traditional patterns, preparatory beat, cutoffs, cueing. Development of the left hand, fermata, subdividing. Mechanics of full score. Conducting "live" groups. Prereq: Two years of music theory or consent of instructor. Letter grade only.

320 Conducting II (2) Developing advanced baton technique. Multiple rhythms, modern beat, and their variations. Developing conducting and interpretation of the full score. Achieving complete physical control. Rehearsal techniques. Conducting "live" groups in advanced works. Prereq: Conducting I or consent of instructor. Letter grade only.

330 Music Methods for the Elementary School (3) Methods and materials for teaching music in the elementary grades. Primarily intended for music education majors. Prereq: Consent of instructor and admission to Teacher Education Program. Letter grade only.

340 General/Vocal Music Methods (3) School methods and materials for teaching music in the elementary, middle and high schools. Intended for the instrumental music education major. Letter grade only.

350 Field Experience in Music Education (1) Prereq: Consent of instructor and admission to Teacher Education Program. May be repeated. Maximum 3 hours. Satisfactory/No Credit grading only.

400 Student Teaching in Music (12) Full time teaching practicum in an approved public school. Prereq: admission to the teacher education program and completion of all Music Education courses required for the Bachelor of Music degree (four-year alternative) in Music Education. Coreq: Music Education 401.

401 Senior Seminar (0) Issues related to the music teaching profession as experienced in Student Teaching. Coreq: Music Education 400.

420 Music Methods for the Junior High School and Middle School (3) Methods and materials for teaching vocal, instrumental, and general music at the junior high school or middle school level. Prereq: Admission to Teacher Education Program and consent of instructor. Letter grade only.

430 Music Methods for High School (3) Methods and materials for vocal and instrumental music at the high school level, including charting for the marching band. Prereq: Admission to Teacher Education Program and consent of instructor. Letter grade only.

441 String Orchestra Pedagogy and Rehearsal Techniques (2) Function, organization and direction of a school orchestra program. Letter grade only.

482 Internship II: Grades K-12 (3-6) Demonstration of professional competence in planning, instruction and classroom management. Internship is completed in local public schools. Prereq: Admission to Teacher Education Program. Satisfactory/No Credit grading only.
COURSES OF INSTRUCTION

490 Special Topics in Music Education (1-3) Prereq: Consent of instructor. May be repeated. Maximum 9 hours. Letter grade only.

493 Independent Study in Music Education (1-5) Prereq: Consent of instructor. May be repeated. Maximum 9 hours. Letter grade only.

MUSIC ENSEMBLE (708)
Prerequisite: By audition or consent of instructor.

301 Woodwind Choir (1) May be repeated.
302 Jazz-Saxophone Ensemble (1) May be repeated. Maximum 4 hours.
303 Small Jazz Ensemble (1) May be repeated. Maximum 12 hours.
304 Jazz Ensemble (1) May be repeated.
305 Studio Orchestra (1) May be repeated. Maximum 12 hours.
306 Trombone Choir (1) May be repeated.
309 Tuba Ensemble (1) May be repeated.
310 Percussion Ensemble (1) May be repeated.
311 Marimba Choir (1) May be repeated.
312 Baroque Ensemble (1) May be repeated.
315 Chamber Music Ensemble (1) May be repeated. Maximum 12 hours.
316 Steel Band (1) May be repeated.
320 UT Singers (1) May be repeated.
330 Chamber Singers (1) May be repeated.
334 Saxophone Choir (1) May be repeated.
340 Opera Theatre (1) May be repeated.
350 Concert Band (1) May be repeated.
352 Symphonic Band (1) May be repeated.
353 Wind Ensemble (1) May be repeated.
354 Pep Band (1) May be repeated.
359 Marching Band (1) May be repeated.
370 Symphony Orchestra (1) May be repeated.
380 Concert Choir (1) May be repeated.
383 Men's Chorale (1) May be repeated.
389 Women's Chorale (1) May be repeated.
399 Accompanying (1) May be repeated.

MUSIC GENERAL (698)

140 Fundamentals of Performance (1-2) Private instrumental or vocal study, one or two half lessons per week. (1 hour credit—elective, secondary or minor; two hours credit—major.) Admission by audition. This course is designed to prepare students for enrollment in Music Performance 103-195. Cannot be used to satisfy applied music requirements at the principal level in the Bachelor of Music or the Bachelor of Arts degree in Music. May be taken for a maximum of 4 credit hours per instrument. A, B, C, No Credit. Requires payment of Applied Music fee.

200 Solo Class (0)
301 Junior Recital (0)
310 Practical Experience in Arts Management (3) Arts management practicum with approved arts organization. Individualized work with music instructor in conjunction with supervised experience in arts organization management. For music majors only. Prereq: Consent of instructor. May be repeated for credit in another area of arts management.

401 Senior Recital (0)
411 Lecture Recital (0)
421 Special Topics in Performance (1-3) Prereq: Consent of department head. May be repeated. Maximum 4 hours.
431 Special Topics in Pedagogy (1-3) Prereq: Consent of department head. May be repeated. Maximum 4 hours.
495 Sacred Music Internship (3) Observation, participation, and supervised leadership experience in the music program of an approved local church. Prereq: Senior standing in a Bachelor of Music Sacred Music Track. Satisfactory/No Credit Grading only.

MUSIC HISTORY (709)

110 Introduction to Music in Western Culture (3) Developing listening skills and understanding of Western music from the ancient world through the 20th century. For non-music majors. Writing-emphasis course.
115 Music in the United States (3) Explores musical traditions of the United States. For non-music majors. Writing-emphasis course.
120 History of Rock (3) Study and appreciation of rock music, its origins in blues and rock and roll, its development and cultural dimensions to the present. Writing-emphasis course.
125 Jazz in American Culture (3) The historical study of jazz as part of American culture, including its styles, key performers, and musical practices. For non-music majors. Writing-emphasis course.

200 Introduction to Music Literature (3) Basic forms of music and accepted masterworks through chronological approach. For music majors and minors only.
210 History of Music I (3) Historical study of musical styles, practices, theories and context of European art music to 1750. Develops skills in independent research, critical thinking and expository writing. For music majors and minors. Prereq: Music History 200. Writing-emphasis course.
220 History of Music II (3) Historical study of musical styles, practices, theories, and context of European art music from 1750 to present. Develops skills in independent research, critical thinking and expository writing. For music majors and minors. Prereq: Music History 200 and 210. Writing-emphasis course.
290 Introduction to World Music (3) Survey of music of representative cultures from Africa, Asia, Oceania, and the Americas with a focus on music as sound and as part of the human condition. Also includes an emphasis on applying basic music terminology to developing listening skills.
310 Introduction to African-American Music (3) History of African music, blues, gospel music, and jazz with emphasis on Black artists and their contributions. (Same as African and African-American Studies 310.)
330 Women in Music (3) History of women in music from the Middle Ages to present as composers, performers, educators, and patrons. (Same as Women's Studies 330.)
340-341 Contemporary Trends in American Church Music I, II (2,2) Survey of sacred music in popular contemporary style, emphasizing analysis and evaluative criteria. Must be taken in sequence. 340 includes theory and keyboard harmony appropriate to the style. 341 includes composition and arranging within the style. Prereq: Music Theory 210-220.
350 History of Jazz (3) Origin, development, and styles of jazz music and its exponents. Cultivation of special listening techniques. Prereq: Consent of instructor. Writing-emphasis course. (Same as African and African-American Studies 350.)
380 Music in World Cultures (3) Examines music from an ethnomusicological perspective focusing on musical performance and the interrelationships of music, culture, and daily life. The course surveys music from a variety of cultures through a series of case studies. Prereq: 210-220, or permission of instructor.
400 Music History Survey (3) History of music with emphasis on genres, style changes, and cultural forces. Western European tradition from 400 to 1900. Recommended as a review course for graduate students. Prereq: Consent of instructor.
410 Music History Genre (3) Topics vary. May be repeated for credit. Maximum 6 hours.
420 History of Opera (3) Dramatic, vocal, and orchestral elements in opera of Italian, French, and German schools. 1600-present.
430 Symphonic Literature (3) Survey of literature for orchestra from Baroque to the present, with emphasis on the evolution of the symphony.
450 Composer Seminar (3) Life and works of a single composer. Subjects vary.
460 Music Aesthetics (3) Nature of music and musical experience, sense perception and emotions, music, and role of artist in society. Aesthetic viewpoint of individual and historical eras through selected writings. Writing-emphasis course.
480 Music in Christian Worship (3) Hymnody, liturgies, and liturgical music.
493 Independent Study (1-15) Prereq: Consent of department head. May be repeated for credit.

MUSIC INSTRUMENTAL (710)

310 Brass Literature and Pedagogy (3) Survey of brass solo and ensemble literature, including instructional materials and methods. Application of pedagogical procedures to individual instruction and performance; demonstration lessons by applied brass faculty and class members. Prereq: Consent of instructor.
320 Woodwind Literature and Pedagogy (3) Survey of woodwind solo and ensemble literature, including instructional materials and methods. Application of pedagogical procedures to individual instruction and performance; demonstration lessons by applied woodwind faculty and class members. Prereq: Consent of instructor.
330 Percussion Literature and Pedagogy (3) Survey of percussion solo and ensemble literature, including instructional materials and methods. Application of pedagogical procedures to individual instruction and performance; demonstration lessons by applied percussion faculty and class members. Prereq: Consent of instructor.
340-350 String Literature and Pedagogy I, II (2,2) 340-Survey of string techniques, issues, research and pedagogies; topical presentations by the applied string faculty and guests. 350-Development of the violin family of instruments and bows; survey of string literature, performances, and performance styles; application of historical, analytical, and pedagogical procedures to performance. Prereq: 340 and applied enrollment in strings at 300 level or above or consent of instructor.
490 Instrumental Conducting (3) Knowledge and skills in instrumental conducting; various periods and composers and relationship of different styles to the conductor’s art; musical analysis and practice in conducting. Prereq: Music Education 320 or equivalent.

MUSIC JAZZ (711)

110 Jazz Theory (2) Fundamentals of the jazz language, including terminology, chord symbols, chord scales, and chord progressions, plus ear-training lab. Prereq: Music Theory 110.
120 Analysis of Jazz Styles (2) Individual improvisatory styles through analysis of their transcribed solos. Training and function of the ear in music. Transcription of solos from recordings and preparation of analysis. Prereq: 110.
130-140 Jazz Piano I, II (1,1) Harmonic language of jazz. Interpretation of chord symbols, formulae for voicing chords, chord progressions, and fundamental melody-playing and improvisation for right hand. Must be taken in sequence.

160 Introduction to Styles in Jazz Drumming (2) Examination of major composers and performers who have contributed significantly to creation of principal styles of jazz drumming.

210-220 Jazz Improvisation I, II (2,2) Study and application of principles of improvisation, including nomenclature, chord progressions, chord-scales, patterns, melodic development, and tune styles. Prereq: 110.

310 Jazz Composition and Arranging (2) Prereq: Consent of instructor.


410 Advanced Improvisation (3) Development of individual skills and solving individual problems in jazz improvisation. Prereq: 210 and 220.

420 Jazz Pedagogy (1) Methods and materials relating to teaching of jazz, designing and administering jazz programs, and rehearsal techniques for jazz ensembles. Prereq: Studio Music and Jazz major or consent of instructor.

MUS I C KE YBO AR D (712)

110-120 Class Piano I, II (1,1) Development of keyboard skills in reading, technique, repertoire, harmonization, and transposition. Must be taken in sequence. Prereq: Successful completion of music audition and theory placement exam. Intended for music majors and minors.

210-220 Class Piano III, IV (1,1) Completion of 110-120. Prerequisite: Piano Pedagogy I, II (3,3) Pedagogical methods and materials related to the development of principles of learning; collaborative teaching experience. Must be taken in sequence.

230 Keyboard Harmony (1) Melody harmonization, figured bass realization, and improvisation. Prereq: Music Theory 110-120.

240 Church Service Playing I (1) Practical skills applicable to the use of the organ in church services, including improvisation, hymn playing, and accompanying. Prereq: 230 and organ proficiency at the 200-level.

260 Early Keyboard Instruments (1) An introduction to the harpsichord, clavichord, and baroque organ. Emphasis on appropriate playing techniques. Brief survey of instrument types, repertoire, and performance practice issues. Prereq: Ability to perform keyboard literature at the 180, 185, or 190 level.

310-320 Church Service Playing II, III (1,1) Continuation of 240. Prereq: 240.

330 Sight Reading at the Keyboard (1) Prereq: Consent of instructor.

340-350 Piano Pedagogy I, II (3,3) Pedagogical methods and materials related to the development of principles of learning; collaborative teaching experience. Must be taken in sequence.


420-430 Piano Literature I, II (3,3) May be repeated.

460-470 The Organ and Its Literature I, II (3,3) Development of the organ and organ literature from the Middle Ages to the present; problems of style and interpretation; organ literature and methods; organ design. Prereq or Coreq: Music History 220 and consent of instructor.

480 Teaching Class Piano (3) Historical survey and evaluation of teaching materials and methodology for college and/or adult beginning piano classes, with collaborative teaching experience. Prereq: Consent of instructor.

485 Suzuki Piano Method I (2) Study of the psychology, procedures, and literature of the Suzuki piano method. Must be taken in sequence. Prereq: Consent of instructor.

490-491 Internship (2,2) Opportunity for pedagogy students to gain experience in teaching beginning students under the supervision of experienced instructors. Includes weekly discussion seminar.

495 Suzuki Piano Method II (2) Study of the psychology, procedures, and literature of the Suzuki Piano Method. Prereq: Consent of instructor.

MUS I C PERF O R M A N CE (713)
Prerequisite: By audition only. Music General 140 or equivalent.

103-203-303-403 Flute (1-4) May be repeated.

105-205-305-405 Oboe (1-4) May be repeated.

110-210-310-410 Bassoon (1-4) May be repeated.

115-215-315-415 Clarinet (1-4) May be repeated.

120-220-320-420 Saxophone (1-4) May be repeated.

125-225-325-425 Horn (1-4) May be repeated.

130-230-330-430 Trumpet (1-4) May be repeated.

135-235-335-435 Trombone (1-4) May be repeated.

140-240-340-440 Baritone (1-4) May be repeated.

145-245-345-445 Tuba (1-4) May be repeated.

150-250-350-450 Percussion (1-4) May be repeated.

155-255-355-455 Voice (1-4) May be repeated.

160-260-360-460 Violin (1-4) May be repeated.

165-265-365-465 Viola (1-4) May be repeated.

170-270-370-470 Cello (1-4) May be repeated.

175-275-375-475 String Bass (1-4) May be repeated.

176-276-376-476 Electric Bass (1-4) May be repeated.

179-279-379-479 Guitar (1-4) May be repeated.

180-280-380-480 Piano (1-4) May be repeated.

185-285-385-485 Harpsichord (1-4) May be repeated.

190-290-390-490 Organ (1-4) May be repeated.

294-394-494 Composition (1-3) May be repeated. Prereq: Music Theory 210 and 230, grade C or higher, or consent of instructor.

395-495 Composition with Electronic Media (1-3) May be repeated. Prereq: Music Theory 210 and 230, grade C or higher, or consent of instructor.

499 Improvisation (1-2) May be repeated. Prereq: Consent of instructor. Cannot be used to satisfy applied music requirement.

MUS I C TE O R Y (714)

100 Fundamentals of Music (3) Theory and practice of basic elements of music. For non-music majors.

105 Introduction to Music Theory (3) Materials of music including scales and modes, key signatures, intervals, triads, diatonic analysis, and an introduction to part-writing. For music majors and minors.

110-120 Theory I, II (3,3) Materials of music from triads and diatonic analysis through secondary dominants and modulation. Exercises in part-writing, analysis, composition and improvisation of music with an emphasis on common practice. Must be taken in sequence. Prereq: 110 – successful completion of music theory placement test or Music Theory 105, grade of C or higher. 120 – Music Theory 110, grade of C or higher.

130 Ear Training I (1) Development of proficiency in identifying and notating melodic, harmonic and rhythmic models. Includes computer lab. Should be taken concurrently with 110. A, B, C, NC grading. Prereq: successful completion of Music Theory Placement Test or Music Theory 105, grade of C or higher.

140 Ear Training II (1) Development of proficiency in identifying and notating melodic, harmonic and rhythmic models. Includes computer lab. Should be taken concurrently with 120.

210-220 Theory III, IV (3,3) Materials of music including altered chords and analytical techniques. Lower class on literature of the Classic, Romantic, and Contemporary periods. Exercises in analysis, composition, and improvisation of music. Must be taken in sequence. Prereq: 210 - Music Theory 120, grade C or higher, or consent of instructor; 220 - Music Theory 210, grade C or higher, or consent of instructor.


310 Form and Analysis (3) Study and practice in analysis of forms of music from smallest structural units to large compound forms. Prereq: Music Theory 210 and 230, grade C or higher.

320 Instrumentation (2) Basic techniques in scoring for voice, brass, woodwind and string choirs and percussion. To be taken by jazz and music education majors. Prereq: Music Theory 210 and 230, grade C or higher.

400 Survey of Music Theory (3) Emphasis on harmonic practice of Baroque, Classic, and Romantic periods. Exercises in writing and analysis. Recommended as a review course for graduate students. Prereq: Consent of instructor.

410 Ear Training Review (1) Review and application of harmonic and melodic dictation skills for graduate and advanced undergraduate students. Prereq: 240 or the equivalent. Required of entering graduate students with a deficiency in ear-training. Satisfactory/No Credit grading only.

420 Orchestration (3) Advanced techniques in instrumental writing with emphasis on scoring for the concert orchestra. To be taken by theory and composition majors. Prereq: Music Theory 210 and 230, grade C or higher.

430-440 Counterpoint I, II (3,3) Species counterpoint in modal and tonal styles with emphasis on works of Palestrina and J.S. Bach. Prereq: 220. 440 — Writing of contrapuntal forms of the 18th century and fugue analysis of works from the 18th through the 20th centuries. Prereq: 430: Music Theory 210 and 230, grade C or higher. 440: Music Theory 430, grade C or higher.
COURSES OF INSTRUCTION

450 Choral Arranging (2) Analysis of scores and writing of arrangements for choirs. Prereq: Music Theory 210 and 240, grade C or higher, or consent of instructor.

493 Independent Study in Music Theory (1-15) May not be repeated for credit. Prereq: Consent of department head.

MUSIC VOICE (715)

110 Class Voice I (1) Development of basic vocal skills. May be repeated for credit. Maximum 2 hours.

230 Acting for Singers (1) Advanced work on song presentation and interpretation; scene study and characterization. Prereq: Consent of instructor. May be repeated. Maximum of 4 hours.

240-250 Diction I, II (2,2) Sounds by phonetic symbols. Opera and art songs used for examples. Performance practice.

330 Opera Production (1-3) Supervised work on opera productions. Prereq: Consent of instructor. Maximum 12 hours. May be repeated for credit.

410-420 Song Literature I, II (2,2) German songs. French, Italian, Russian, Scandinavian, Czechoslovakian, British, and American art songs. No graduate credit for students in the M.M. concentration in Vocal Performance.

425 Functional Diction for Singers (3) Comprehensive one-semester survey of singing diction in six languages: English, French, German, Italian, Latin and Spanish. Basic instruction in the International Phonetic Alphabet; development of basic diction skills; overview of diction styles and traditions in each language; survey of diction resources and reference materials. Suitable for Sacred Music and Music Education majors with a concentration in Voice and for graduate students in Choral Conducting. Does not fulfill deficiency requirements for graduate students in Voice Accompaniment.

450-460 Pedagogy I, II (2,2) 450-Concepts and approaches to teaching singing past and present for all ages of voices. 460-Vocal teaching materials: includes collateral teaching experiences. Prereq: Consent of instructor.

NUCLEAR ENGINEERING

See Engineering Nuclear.

NUCLEAR MEDICINE AND TECHNOLOGY (718)

Courses in this concentration are open only to qualified students who have completed the first three years of the Nuclear Medical Technology Curriculum, described in the College of Arts and Sciences curricula section of this catalog, and who have been admitted to the Nuclear Medical Technology Program at UT-MCH.

410 Physics for Nuclear Medicine I (3) Nuclear physics, mathematics, and statistics. Survey of historic and current concepts in atomic and nuclear structure, interrelationships between matter and energy, nuclear reactions, nuclear stability, production of radionuclides, radionuclide generators, decay schemes, and charts used in nuclide identification and behavior prediction. Mathematics and statistics topics include basic arithmetic theories, mathematical manipulations, and applied technical mathematics for use in radio active decay equations, dose calculations and concentration, volume and shielding determinations. Graphing, counting statistics and other physical and chemical applications of mathematics to nuclear medicine are included. May not be substituted for Physics 471 or 472.

411 Nuclear Instrumentation (3) Course concerns non-imaging, imaging, and instrument quality assurance. Non-imaging topics include basic radiation detectors, their applications, functions, and limitations with overview of basic electronics, gas-filled detectors, statistics and counting, solid and liquid scintillation detection systems, semiconductor and instrument stabilization, and quality control. Imaging topics are instrumentation of imaging devices including basic function, application of principles and quality control. Quality assurance unit emphasizes, functional and maintenance requirements of nuclear instrumentation, radiation safety practices, and statistical analysis of quality control data.

412 Radiopharmacy (2) Emphasis on basic chemistry and radiochemistry in nuclear radiopharmacy. Topics include radiopharmaceutical preparation and quality assurance, radiopharmaceutical production, and basic photographic film chemistry. Kinetics, biodistribution, and mechanisms of localization are also included, plus guidelines and regulations governing radiopharmacy management and operation.

415 Physics for Nuclear Medicine II (3) Continuation of 410 with focus on radiobiology and radiation safety. Radiobiology topics include interactions of radiation and matter, cellular and systemic responses to radiation, early and late somatic and genetic effects, biological effects of low level radiation, critical organ and dose calculations, and benefit versus risk factor. Radiation safety topics include exposure terminology, dose limit recommendations, ALARA philosophy, federal and state regulations, radiation monitoring equipment, and methods and techniques for safe practice of nuclear medicine.

420-430-440 Clinical Nuclear Medicine I, II, III (4,4,4) Theories and applications of nuclear medicine methodology. I—Patient care, central nervous system, endocrine system, gastrointestinal and genitourinary system; II—hepatic and hepatobiliary system, genitourinary system, musculoskeletal system, non organ/tumor/inflammatory imaging, cardiovascular imaging, non-imaging nuclear medicine; III—single photon emission tomography, positron emission tomography, clinical quality assurance, pediatric nuclear medicine, radiomucicide therapy, and management and administration of nuclear medicine programs.

425 Computer Applications in Nuclear Medicine (3) Computer systems, applications, and components in quantitation in nuclear medicine. Topics include acquisition modes and limitations, image processing modes and limitations, and image quantitation with some attention to machine and language architecture and numbering systems.

450-460-470 Clinical Practicum I, II, III (4,4,6) Clinical instruction in routine nuclear medicine procedures conducted at UT-MCH and other clinical sites. Clinical instruction activities in imaging, instrumentation, radiotherapy, dose administration, radiation safety and protection, patient care and preparation, computer applications, radionuclide therapy, and basic administrative and management procedures.

475 Nuclear Medicine Registry Review (2) Preparation for National Registry Examination with special emphasis on film interpretation and reporting in technical critique sessions.

NURSING (720)

All upper-division nursing courses except 314, 351, 406, and 480 are restricted to students who have progressed into the major. See Progression Policies and Procedures.

201 Intro to Nursing (2) Introduction to Nursing (3) History, philosophy, and scope of nursing practice with emphasis on the holism of persons, standards for professional practice, and an overview of the nursing process and nursing theories. Prereq: Application for progression to Nursing major.

202 Health and Culture (3) An exploration of the beliefs and practices of various cultural groups within the United States in relation to health, illness and the health care delivery system. Implications for the helping professions are examined. This course has no prerequisites and is open to all UT undergraduate students.

305 Transitions to Professional Nursing (5) Builds on the knowledge base and experience of RNs in transition to professional nursing. Focuses on the conceptual foundations of nursing practice and issues in health care delivery. For RNs only. 4 lecture, 1 lab.

311 Foundations of Professional Nursing Practice (5) Emphasis on patient centered nursing, therapeutic interventions, and critical thinking as key elements in the use of the nursing process. Clinical laboratory experiences provide opportunity for the application of these processes in the care of adults in selected health care settings. 2 lecture, 3 lab.

314 Wellness and Lifestyle (3) Models of wellness and holistic health within the framework of modern medicine, eastern philosophy, and recent discoveries about the interaction of mind and body. Biopsychosocial interactions of lifestyle and genetic risk factors for cardiovascular and malignant diseases, wellness potential, and potential longevity. Process of lifestyle changes will be facilitated by faculty. Open to undergraduate students in all colleges.

319 Pathophysiology of Health Deviations (4) Application of physiological concepts to health promotion, maintenance, deviations, and restoration. Introduction to psychoneuroimmunology. Emphasis on interactions of body systems, and impact of disease processes on the human body.

333 Health Assessment (3) Theory and laboratory practice in the systematic assessment of health status including history taking and performance of physical assessment skills. For RNs, this course is prerequisite to any clinical course beyond 305 Transitions. 2 lecture, 1 lab.

341 Health Promotion (3) Introduction to health promotion concepts and nursing interventions for health promotion and disease prevention.


361 Health Maintenance and Restoration Across the Life Span (5) Focus on health maintenance and restoration in nursing practice with children or adults experiencing commonly occurring acute or chronic illness. 2 lecture, 3 lab. Prereq: 311, 319, 333, 341, or RN status. Coreq: 351.

381 Professional Leadership Issues (2) Focus on concepts and strategies for management and leadership as a professional nurse. Emphasis on problem identification, individual responsibility, decision making, communication, confrontation, collaboration, conflict resolution, coordination, delegations, supervision, and team building to support safe client care. Prereq: 311, 341 or RN status.

382 Health Promotion and Maintenance in Community (4) Focus on nursing care of at risk populations. Design and implement interventions to promote and maintain health. Includes assessment of socio-cultural values, environmental factors, health education, and community resources. Prereq: 311, 319, 333, 341, or RN status. Coreq or Prereq: 351, 361. 2 lecture, 2 lab.

400 Aging and Society (3) An examination of the health and social effects of longevity and the aging process including societal and personal attitudes about old age. Resources, trends, issues, and potentials of aging are explored. Voluntary community service, a service learning experience in the community, is required. Open to undergraduate students in all colleges.

402 Gerontology Practicum (3) Off-campus supervised experience in gerontology. A minimum of 40 practicum hours is required. Offered as part of the gerontology minor. Open to students in all colleges. Prereq: Consent of instructor.

403 Health Promotion and Maintenance in Child Bearing Families (5) Nursing practice for promotion, maintenance, and restoration of reproductive health. Emphasis on therapeutic relationships with childbearing families for long term positive impact on health care and lifestyle. 3 lecture, 2 lab. Prereq: All required 300-level courses or RN status.

406 Pharmacology II (2) Continuation of 351 with emphasis on nursing responsibilities in the safe and effective use of therapeutic drugs, recognition and reporting of side effects, and critical aspects of patient education. Prereq: 351.

415 Family/Community Health Nursing (6) Application of the nursing process to individuals, families, groups in the childbearing/tearing stages of development. Clinical experiences are provided in a variety of hospital and community settings. 3 lecture, 3 lab. Prereq: All 300-level nursing courses. For non-nurse MSN students only.
421 Mental Health Maintenance and Restoration (4) Nursing to support and care for persons with mental health needs. Emphasis on use of self as therapeutic agent with individuals, groups and families and developing nursing strategies for mental health maintenance and restoration. Prereq: all required 300-level nursing courses or RN status. 2 lecture, 2 lab.

432 Health Promotion, Maintenance, Restoration in the Community (3) Focus on nursing care of at risk individuals, communities, and populations. Assessment of sociocultural values, environmental factors, health education, and community resources. Design of interventions to promote, maintain, and restore health through the use of the epidemiological process.

442 Directed Clinical Practice in Community Health Nursing (1) Clinical practice in a community health setting. For RN Master’s Entry students only. Prereq or Coreq: 432.


452 Professional Leadership Issues III (2) Legal and regulatory processes affecting nursing practice and the application of personal and professional values. Application of the concepts of group dynamics and team work issues having an impact on nursing practice. Prereq: All required 300-level nursing courses and 451.

461 Health Restoration Across the Life Span (5) Focus on nursing practice for health restoration with children, adults, and their families with acute, complex health needs. Emphasis on quality of care, coordination of care, and end-of-life care. Prereq: All required 300-level nursing courses. 3 lecture, 2 lab.

470 Special Topics (1-3) In-depth study of selected nursing topics, problems, or issues not covered in other courses. Topics determined by faculty and student interest. Prereq: Consent of instructor.

471 Nursing Research (3) Introduction to research, design, and methodologies. Critique of selected research studies for application to evidenced-based nursing practice. Prereq: All required 300-level courses, or consent of instructor, or RN status.

480 Nursing Informatics (1-3) Provides opportunity for nursing students and/or registered nurses to acquire and develop skills in computer applications and the field of nursing informatics. Existing and future health information systems will be examined. Emphasis is placed on hands-on acquisition of basic computer competencies. Use of electronic communication, word processing, spreadsheet, database, presentation, and computer-assisted-instruction programs. Students will also be exposed to nursing documentation, flowcharting, and authoring software. 2 lecture, 1 lab. Prereq: Upper-division or RN status or consent of instructor.

482 Health Maintenance and Restoration in Community (4) Analysis of health needs of a selected community utilizing the epidemiological process. Emphasis on visiting clients and families across the life span in their own environment. Prereq: All required 300-level nursing courses; for RNs 305, 333, 351. Prereq or Coreq: 319. 2 lecture, 2 lab.

490 Specialty Preceptorship (4) In-depth practicum to develop knowledge and skill in a selected specialty area under direct guidance of clinical preceptor. Knowledge development in specialty area under guidance of faculty. Prereq: 406 and 451. Prereq or Coreq: 403, 421, 471, 461, 482 or RN Status. 1 lecture, 3 lab.

491 International Studies (1-3) Participation in selected health and nursing care in foreign countries. Requires consent of instructor.

493 Independent Study (1-3) Nursing or health-related topic not covered in other nursing courses. Prereq: Senior standing or consent of instructor.

NUTRITION (726)

100 Introductory Nutrition (3) Nutritional concepts; current consumer issues in nutrition; nutritional needs of the life cycle; international nutrition; nutrition majors who has received credit for NTR 300 may not receive credit for this course.

102 Microcomputer Applications (3) (Same as HRA 102, CTS 102, RCS 102.)

104 Sports Nutrition for Athletes (1) Nutritional concepts focusing on the optimal training diet; balancing energy with activity; positive fueling before, during, and after sports events; sorting out nutritional supplements.

201 Careers in Nutrition (1) Overview of nutrition-related careers. Routes to meeting nutritional needs through life cycle; international nutrition concerns and issues. A nutrition major who has received credit for NTR 300 may not receive credit for this course.

300 Fundamentals of Nutrition (3) Nutrition in normal and altered health states during life cycle; nutritional analysis of diets. Prereq. Chemistry 110 or equivalent. Prereq or Coreq: Biochemistry and Cellular and Molecular Biology 230. A nutrition major who has received credit for 100 may not receive credit for this course.

302 Life Span Nutrition (3) Physiological development and psychosocial factors that influence nutrient needs and nutrition behaviors of individuals across the life span. Nutrition education strategies for various age groups. Prereq: 100, Biochemistry and Cellular and Molecular Biology 230, or consent of instructor.

303 Foodservice Systems Management (3) Assessment of managerial, organizational and operational structures in foodservice systems with a focus on management related to foodservice practice; human resource policies and strategies applied to foodservice systems management.

310 Physiological Chemistry (4) (Same as Biochemistry and Cellular and Molecular Biology 310.)

312 Science of Food (4) Elements of food selection, safety, preparation and evaluation. Chemical and physical properties of foods related to functional and nutritional properties. Sensory evaluation concepts and techniques. Effects of processing on food. Prereq: 100, Chemistry 350. Coreq: Microbiology 210. 3 hours and 1 lab.

313 Vitamins and Minerals (3) Functional properties and interrelationships among vitamins and minerals as they apply to human nutrition. Prereq: 100, Biochemistry and Cellular and Molecular Biology 230, Chemistry 350. Coreq or Prereq: 310.

314 Energy Metabolism and Metabolic Integration (3) Integration of carbohydrate, fat and protein metabolism as applied to nutrient utilization and requirements in humans. Prereq: 310, 313.

410 Professional Issues in Dietetics (1) Dietetic registration, licensure; third party payments; dietetic practice; marketing dietetics; internship application preparation; public policy in dietetic practice; Prereq: Senior standing.

412 Food and Nutrition in the Community (3) Influence of health characteristics, geographic, social, economic, educational and cultural factors on food and nutrition programming; relationship of community food and nutrition problems to programs and services for families and communities with particular attention to disease prevention; public policy. Prereq: 302, 415.


420 Food and Nutritional Analysis (4) Principles, procedures, and instrumentation for analysis of food and body fluids. Interpretation of chemical, dietary, and anthropometric data analysis in nutrition research. Prereq. 100, 310.

450 Special Topics: Nutrition (1-3) Developments, issues and problems in Nutrition; topics variable. Prereq: Junior or Senior standing in NTR or consent of instructor. May be repeated. Maximum 3 credits.

490 Introduction to the Dietetic Internship (3) Applications of clinical, food service, and management theories to dietetic practice. Restricted to Dietetic Internship students.

492 Field Experience: Nutrition (1-3) Prereq: Junior or Senior standing, consent of instructor. Satisfactory/No Credit grading only.

493 Directed Study: Nutrition (1-3) Individual student: faculty experience. Prereq: Junior or senior standing, consent of instructor. Letter grade only.

PERSIAN (744)

161-162 Elementary Persian I,II (4,4) (Same as Asian Studies 141-142.)

261-262 Intermediate Persian I,II (4,4) (Same as Asian Studies 261-262.)

PHILOSO PHY (745)

110 The Human Condition: Values and Reality (3) The meaning of life, the existence of God, freedom of the will, human nature and values. Writing-emphasis course.

111 The Human Condition: Knowledge and Reality (3) The place of mind in a material universe and the nature and possibilities of human knowledge. May be taken before 110. Writing-emphasis course.

120 Foundations of Western Thought: Antiquity through 1500 (3) Plato, Aristotle, Late Antiquity and the Medieval Period. Writing-emphasis course.

121 Foundations of Western Thought: 1500 through Early Twentieth Century (3) Development of Rationalist and Empiricist thought, Nineteenth Century and early Twentieth Century Philosophy. May be taken before 120. Writing-emphasis course.

130 Critical Thinking (3) An introduction to practical reasoning in natural language, design, inference, skill in recognizing, analyzing, evaluating and constructing arguments. Satisfies Arts and Sciences Basic Skills Requirement “Mathematics, Computer Science or Logic.”

135 Formal Logic (3) Introduction to formal deductive systems: propositional and predicate logic, Satisfies Arts and Sciences Basic Skills Requirement “Mathematics, Computer Science or Logic.”

200 Special Topics (3) When content varies, may be repeated. Maximum 6 hours.

240 Ethics (3) Theories of ethical values. Writing-emphasis course.

242 Ethical Theory and Its Applications (3) A study of moral values and principles in theoretical and practical contexts.

290 Social and Political Philosophy (3) Basic problems and concepts of social and political philosophy.

300 Special Topics (3) May be repeated. Maximum 6 hours.

320 Ancient Western Philosophy (3) Writing-emphasis course.

322 Medieval Philosophy (3) Development of medieval thought from St. Augustine to William of Occam. Secondary and primary sources. (Same as Medieval Studies 322 and Judaic Studies 322.) Writing-emphasis course.

324 Seventeenth- and Eighteenth-Century Philosophy (3) Writing-emphasis course.

326 Nineteenth- and Twentieth-Century Philosophy (3) Writing-emphasis course.

328 Business Ethics (3) Ethical problems as they confront both business as a social institution and individuals in business. Writing-emphasis course.

344 Professional Responsibility (3) Critical analysis of selected classic texts from philosophy, religious studies, and social sciences dealing with responsibility and the nature of professionalism. Theoretical principles and analytical skills applied to selected case studies and other detailed descriptions of professional practice from engineering/architecture; business/accounting; and at least one of law/politics; helping professions (social work, human services, ministry); teaching. Writing emphasis course. (Same as Legal Studies 344 and Religious Studies 344.)

345 Bioethics (3) Ethical issues in health care such as abortion, euthanasia, human experimentation, fairness in health care delivery and the doctor-patient relationship. Writing-emphasis course. (Same as Religious Studies 345.)
346 Environmental Ethics (3) Issues concerning the nature of the environment and the place of humanity within it.

350 Aesthetics (3) Philosophical discussion of art. Writing-emphasis course.

353 Philosophy and Literature (3) Nature of literature; philosophical assumptions in literary works. Writing-emphasis course.

360 Philosophy of Science (3) An introduction to major problems in the Philosophy of Science. Specific issues vary, but may include: the nature of causality; the relationship between experiments, theories, and scientific practice; how theories change and how scientific disputes get settled; the role played by social organization in science (e.g. gender and race issues); and others. Writing-emphasis course.

370 Philosophy of Religion (3) Analysis of basic issues in the philosophy of religion. (Same as Religious Studies 370.)

374 Philosophy and Religion of India (3) (Same as Religious Studies 374.)

376 Buddhist Philosophy and Religion (3) (Same as Religious Studies 376.)

379 Religion and Philosophy in China (3) (Same as Religious Studies 379.)

382 Philosophy of Feminism (3) Various feminist theories and their application to social issues of concern to women today. Writing-emphasis course. (Same as Women’s Studies 382.)

390 Philosophical Foundations of Democracy (3) Philosophical problems relating to the nature and justification of the central values, principles, and concepts of democratic society. Writing-emphasis course.

392 Philosophy of Law (3) A course in analytic and normative jurisprudence. Such topics as the nature of legal systems as normative social practices, the relationships between law and morality, theories of adjudication and legal reasoning, the justification of punishment, theories of legal responsibility, law and economics, and feminist and neo Marxist critiques of law. Writing-emphasis course. (Same as Legal Studies 392.)

395 Existentialism (3) Themes related to freedom and finitude in the tradition that begins with Kierkegaard and Nietzsche, and extends to Heidegger and Jaspers, Sartre and Merleau-Ponty.

400 Special Topics (3) When content varies, may be repeated. Maximum 6 hours.

411 Modern Religious Philosophies (3) (Same as Religious Studies 411.)

419 Science as Method (3) (Same as Ecology and Evolutionary Biology 419 and Botany 419.)

420 Topics in History of Philosophy (3) One or more figures or movements from antiquity through mid-twentieth century. Prereq: 6 hours of philosophy or consent of instructor. When content varies, may be repeated. Maximum 9 hours.

435 Intermediate Formal Logic (3) Metatheory of formal logic and philosophy of logic. Prereq: 155 or consent of instructor.

440 Contemporary Ethical Theory (3) Topics in meta-ethics or ethics. Prereq: 6 hours of philosophy or consent of instructor.

446 Theoretical Issues in Medical Ethics (3) Prereq: 240 or 345 or consent of instructor.

462 Philosophy of Biology (3) An introduction to current issues in the Philosophy of Biology. Specific problems vary, but will likely include: the nature of natural selection, adaptation, and fitness; the level of selection debate; the nature of species; the interaction of environment and organism, and others. Prereq: upper-division coursework in philosophy or biology or permission of instructor.

472 Philosophy of Language (3) Problems of meaning, reference and truth. What is the relation between words and the world? How do sentences manage to be about the world? What is it for something to be true? Prereq: 3 philosophy courses 200 level or above.

473 Philosophy of Mind (3) Problems of mind and body in relation to consciousness and personal identity. Prereq: 6 hours of philosophy or consent of instructor.

479 Studies in Recent Continental Philosophy (3) Selected thinkers or topics from areas such as Existentialism, Phenomenology, Hermeneutics, Structuralism, Post-Structuralism. Prereq: 6 hours of philosophy or consent of instructor. When content varies, may be repeated. Maximum 6 hours.

491 Foreign Study (1-15)

492 Off-Campus Study (1-15)

493 Independent Study (1-15)

PHYSICALEducation AND Activity Program (764)

200 Special Topics (1-2) Selected topics in various activities not covered in the regular program. When content varies, may be repeated. Maximum 6 hours. Satisfactory/No Credit grading or letter grade.

202 Badminton (1) Fundamental badminton technique, game strategy, and rules for singles and doubles play.

206 Bowling (1) Introduction to ball selection, approach, spot bowling, rules, scoring, etiquette, and basic terminology necessary for enjoyable recreational bowling.

211 Golf (1) Introduction to chipping, putting, full swing, rules, etiquette, and scoring necessary for enjoyable recreational play.

213 Ice Skating (1) Beginning skills and etiquette in ice skating. Satisfactory/No Credit grading only.

216 Martial Arts (Special Topics) (2) Special Topics. Selected topics in various forms of martial arts, including but not limited to jiuitsu, judo, karate, and tai chi. When content varies, may be repeated. Maximum 6 hours.

224 Physical Fitness: Conditioning (1) Program of flexibility, strength, and cardiovascular endurance through exposure to various exercise forms.

225 Physical Fitness: Exercise to Music (1) Total body workout to music with lecture emphasis on basic fitness components of flexibility, strength, and cardiovascular fitness.

226 Exercise and Weight Control (1) Fitness activities and basic fundamentals of nutrition for students interested in losing weight: includes body composition assessment and instruction on achieving a goal weight.

229 Physical Fitness: Jogging (1) General factors on physical fitness with emphasis on the improvement of cardiovascular fitness through jogging.

230 Physical Fitness: Swimming (1) Introductory course outlining basic principles of fitness, evaluation, and workout design in the aquatic environment.

231 Physical Fitness: Walking (1) Course for those wishing to begin a fitness program: includes measurement and interpretation of fitness components, including body composition, cardiorespiratory fitness, low back function and nutrition.

232 Racquetball I (1) Pass, kill, ceiling shots, and basic serves. Singles and doubles strategy, necessary for recreational play.

234 Soccer (1) Introduction to individual and team fundamentals, rules, and strategy.

235 Social Dance (2) Popular ballroom dance forms such as the swing (shag), fox trot, cha cha, tango and rumba.

236 Softball (1) Introduction to individual and team fundamentals, rules and strategy.

239 Beginning Swimming (1) Includes skills in the American Red Cross basic swimming course for the non-swimmer.

240 Intermediate Swimming (1) Crawl stroke, elementary back stroke, side stroke, back crawl, breast stroke, entries and turns.

244 Tennis I (2) Introduction to forehand, backhand, serve, volley, rules, scoring and simple strategy.

245 Tennis II (1) Development of accuracy and improved technique of ground strokes and serve; introduction to smash, spin serve, and advanced strategy.

249 Tumbling I (1) Beginning tumbling skills including forward and backward rolls, twisting, balance, agility, and combinations.

251 Volleyball (1) Introduction to individual and team fundamentals, rules, and strategy.

252 Weight Training (1) Introduction to the principles of strength development for large muscle groups through the use of free weights and machines.

254 Yoga and Relaxation (1) Introduction to yoga and various forms of relaxation, with the majority of class time spent learning and refining the postures. Satisfactory/No Credit grading only.

255 Water Safety Instructor (2) Prepares individuals to teach American Red Cross basic swimming and personal safety courses. ARC certification.

256 Lifeguarding Training (2) American Red Cross lifeguarding and aquatic management techniques. ARC certification. Prereq: Swim test second day of class.

259 Snow Skiing (1) Development of skills necessary to balance, walk and slide while on skis. Learn ski etiquette and “Skier’s Responsibility Code.” Satisfactory/No Credit grading only.

260 Western Dance (1) Popular western dance forms including line dances, western social dances, mixers and couples.

261 Scuba Diving (1) Introduction and developmental SCUBA diving skills as well as the theory, safety skills and practical application of skills to open water SCUBA diving.

PHYSICS (773)

101-102 How Things Work (3,3) For students with majors outside science. Examines familiar objects of everyday experience and leads to an understanding of the physical principles that makes them work.


137-138 Honors Fundamentals of Physics for Physics Majors (5,5) For physics and engineering physics majors and qualified students from other majors. Coreq: Mathematics 141-142.

161 Elements of Physics for Architects and Interior Design Students (3) Chosen topics in physics for architecture and interior design students. Course emphasizes material development by logic and lecture demonstrations. Prereq: Intermediate Algebra and one year of geometry.

221-222 Elements of Physics (4,4) Basic physical principles and applications required in premedical, pre-dental, pre-pharmacy and pre-veterinary programs. 221—Mechanics, heat, wave motion, and optics. 222—Electricity and magnetism, modern physics. Must be taken in sequence. 3 hours lecture, 3 hours lab. Prereq: Mathematics 130 or Calculus.

231 Fundamentals of Physics: Electricity and Magnetism (3) For engineers and Arts and Sciences majors in mathematics and the physical sciences. Required of all engineering students. Prereq: Engineering Fundamentals 102; Coreq: Mathematics 142. 2 hours lecture, 3 hours lab/recreation.

240 Fundamentals of Physics: Modern Physics (3) Special relativity, fundamental concepts of modern physics and their applications to atomic, nuclear, particle and condensed matter physics. Prereq: 136 or 138 or consent of instructor.


321 Thermal Physics (3) Concepts of temperature and heat; laws of thermodynamics; elementary statistical mechanics; applications to physical and chemical problems. Prereq: 311, or 136, or 138, or 231.

341 Introduction to Nuclear Physics (3) Introductory theoretical nuclear physics with emphasis on applied aspects. Primarily for Nuclear Engineering majors. Prereq: 240 or 232.

342 Structure of Matter (3) Physics of molecules and condensed matter. Prereq: 240 or 232

361-362 Electronics Laboratory (3,3) Electronic devices and instrumentation techniques in the physics laboratory. 361—Basic analog and digital electronics, including elementary building blocks of relevance to data acquisition systems, operation amplifiers, digital-to-analog and analog-to-digital conversion, use of standard laboratory instruments, and applications of microcomputers. 362—Advanced instrumentation techniques applied to the study of electronic circuits as dynamic physical systems, feedback and stability, noise, discrete sampling, Fourier analysis and synthesis, nonlinear circuit dynamics. Prereq: 136 or 138 or 232. 6 hours lab per week.

401 A Survey of Physics (3) A survey of physics from earliest times to the present, emphasizing the unifying philosophical and mathematical principles. Classical theories of gravitation, electromagnetism, and relativity; various forms of quantum mechanics, quantum electrodynamics, and recent theories of particles, fields, and their interactions. Consideration of the effects of physics on modern society and the practice of physics from a value-oriented perspective. Written reports on important original papers, thought-provoking problems, comparing different fields of classical physics, and a final oral and written report on some independent study. Prereq: Senior standing in Physics or consent of instructor.


421 Modern Optics (4) Transmission of light in uniform, isotropic media, reflection and transmission at interfaces; mathematics of wave motion and interference effects. Rudiments of Fourier optics and holography. Prereq: 431 or 150 or 138 or 232 and consent of instructor. 3 hours lecture, 4 hours lab.

431-432 Electricity and Magnetism (3,3) Electrostatics, magnetostatics, coupled electric and magnetic fields, Maxwell’s Equations, electromagnetic waves and radiation. Prereq: 138 or 136 or 232.

441-442 Contemporary Physics (3,3) An introduction to the major fields of contemporary physics ranging from Cosmology to High Energy. In addition to a discussion of the fundamental concepts of each field, the essential elements of Electricity, Magnetism and Quantum Mechanics will be covered. Must be taken in sequence. Prereq: 240 or equivalent, 311-312, 321.

453-454 Team Research Project (3,3) Student teams will carry out major experimental or computational projects. The team in consultation with the instructor will choose the topic and develop a plan for the project. Each team will conduct several oral presentations in an independent manner, carry out the project, and produce a final written report. Must be taken in sequence. Prereq: 361, 461.

461-462 Modern Physics Laboratory (3,3) 461—Introduction to fundamental and modern techniques in experimental physics, and to the theory and practice of measurement and data analysis. Selected experiments in nuclear, atomic, molecular and solid state physics, and modern optics. Prereq: 361 and either 240 or 411. 462—Advanced experiments and experimental techniques in modern physics; experimental team work. Thorough quantum mechanical interpretation of the results and preparation of scientific reports. Prereq: 461. 6 hours lab per week.

490 Senior Seminar (1-3) Topics of current interest. May be repeated with consent of department. Maximum 6 hours.

491 Foreign Study (3-15)

492 Off-Campus Study (3-15)

493 Research and Independent Study (1-3) Research and study in field of particular interest with faculty guidance. Consent of department is required. Maximum 6 hours.

PLANNING (782)

401 The City in the United States (3) Development and character of United States cities. Contemporary issues and selected case studies. (Same as Urban Studies 401.)

402 Survey of Planning (3) History of city development and of planning with special attention to the United States experience in urban and other levels of planning. State of the art, the process, the contemporary plan, implementation devices. Planning issues in society. Not for credit for M.S.P. degree. (Same as Urban Studies 402.)

446 Housing (3) Nature and demand for housing in U.S. and abroad, U.S. experience. Private market processes and public influences. Problems of change in housing supply, impact of new technology, and governmental programs to improve supply and quality of housing.

477 Plant Sciences and Landscape Systems (790)

110 Introduction to Ornamental Horticulture (3) Survey of the history, science, crafts, professions, and businesses of ornamental horticulture. Prereq: Enrollment is restricted to 301-305 for sophomores; open to all non-sophomores. 5 hours.

120 Basic Landscape Plants (3) Identification, classification, adaptation, culture and landscape design uses of basic ornamental trees, shrubs, and vines. Prereq: 8 hours biological sciences or consent of instructor. 2 hours and 1 lab.

220 Interior Plantscaping (3) History and introduction of the interior plantscaping industry. Identification, culture, and design uses of plants for the commercial interior plantscaping industry. Management of the interior environment including light, humidity, growing media, insects, and diseases. Commercial use of containers, planters, water features, and artificial plants. Prereq: 110 or consent of instructor.

331 Interior Plantscaping II (3) Commercial application of design, sales, sales proposals, plantscaping management, and basic plantscaping business management for the Interior Plantscaping industry. Prereq: 230 or consent of instructor.

325 Introduction to Crop Science (3) Introduction to world crops and food production systems. Emphasis on production methodology, origin and development, environmental interactions, plants and human nutrition, ecological processes of sustainability, current technology, and practices of crop production. Prereq: One year biological science. 2 hours lecture and one 2-hour lab.

280 Fundamentals of Landscape Design (3) History of landscape design as it relates to contemporary applications. Awareness and sensitivity to the landscape; basic graphic skills and some basic design theory with an emphasis on urban and regional land planning. Introduction to landform, landscape materials, and planting design. 1 hour and 2 labs.

326 Public Horticulture (3) In-depth study of the public horticulture industry. Attention given to the diversity of public horticulture institutions, career opportunities, and research. Discussion of current topics and issues. Prereq: 110 or consent of the instructor.

330 Plant Propagation (3) Physiology, methodology, and environmental requirements for propagation. Prereq: 8 hours of biological sciences or consent of instructor. 2 hours and 1 lab.

334 Weed Management (3) Principles of weed interference, integrated management, herbicide selectivity and behavior, specific recommendations for various crop and non-crop situations. Prereq: Environmental and Soil Sciences 210. 2 hours and 1 lab.

340 Turfgrass Management (3) Practical turfgrass management; cultivar selection, identification, and establishment; basic applied fertility programs, mowing, and irrigation practices, and thatch and compaction control; pest identification and basic controls. Prereq: Environmental and Soil Sciences 210; 8 hours biological sciences or consent of instructor. 2 hours and 1 lab.

350 Basic Landscape Construction (3) Basic materials and detailing. Introduction to the landscape construction and contracting industry; application of landscape materials, wood, concrete and masonry construction; site drainage, and landscape grading. Prereq: 280. 2 hours and 1 lab.

360 Practicum in Landscape Construction (3) Practical experience in implementation of landscape development projects. Directed lab and field instruction in planting operations and basic landscape construction including interpreting and implementing landscape drawing and specifications. Prereq: 350. Two three hour labs.

370 Grounds Maintenance (3) Identification and understanding of maintenance tasks; transplanting, soil amendments, growth control, irrigation, climate protection and pest control. Maintenance and use of equipment; management practices. 2 hours and 1 lab.


390 Fall Herbaceous Ornamental Plants (3) Identification, culture, and landscape use of late summer and fall herbaceous ornamental plants including annuals, perennials, herbs, and ornamental grasses. Basic gardening practices and design elements using such herbaceous ornamental plants. Prereq: 110 or consent of instructor.

391 Spring Herbaceous Ornamental Plants (3) Identification, culture, and landscape use of Spring and early summer herbaceous ornamental plants including annuals, perennials, herbs, bulbs and wildflowers. Basic gardening practices and design elements using such herbaceous ornamental plants. Prereq: 110 or consent of instructor.

410 Nursery Management and Production (3) Management methods as applied to retail and wholesale nurseries and landscape contracting firms. Methods of producing container, and field-grown woody ornamental plants. Prereq: 220, 330, and Environmental and Soil Sciences 210. 2 hours and 1 lab.

411 Native Plants in the Landscape (3) Native plants and plant communities as a basis for landscaping and environmental restoration. Weekly lecture coupled with either an outing or service practicum of invasive exotic plant removals or planting of natives. Study and work sites will primarily be demonstration projects of the UT Environmental Landscaping Lab. They include local schoolyard habitats, greenways, wetlands, streambanks, and shorelines. Prereq: 220, Botany 330 or consent of instructor.

427 Management and Administration of Public Horticulture Institutions (3) Management of resources in non-profit institutions, support organizations and communities. Theoretical framework and institutional mission; strategic planning and programming; fundraising; developing and budgeting; personnel policies; volunteer development; marketing and publicity; legal issues; relationships between staff and governing boards; the use of information technology in management and governance systems; and conservation/preservation roles in community development. Prereq: 326.

429 Field Study of Public Horticulture Institutions (3) Extended 10-12 day field study of various public horticulture institutions such as botanical gardens, arboretum, historical grounds, zoos, conservatories, cemeteries, and nature preserves. Application and travel fee required. Prereq: 326.
430 Greenhouse Floral Crop Production (3) Principles of greenhouse operation and management for commercial production of floral crops. Greenhouse construction and operation, crop scheduling and cost accounting. Environmental inputs and cultural practices as they affect plant physiological processes and influence plant growth and development. Prereq: Agriculture and Natural Resources 290 or consent of instructor.

431 Physiology and Ecology in Agroecosystems (3) Plant physiology and ecology applied to crop production and management. Emphasis on plant physiology and ecology principles as they relate to crop production practices from seeding to harvesting and handling. Interaction of crops with their environment and sustainable agroecosystems. Prereq: 230. 2 hours lecture one 2-hour lab.

433 Agricultural Pesticides (3) Regulation of pesticide development, manufacture, transportation, marketing, and use. Structure, use, mode of action, degradation and environmental impact of pesticides used in agriculture, forestry and related areas. Prereq: 1 year biological sciences and 1 semester chemistry. 2 hours and 1 lab.

434 Fruit and Vegetable Crops (3) Principles of production systems to counter environmental stresses and to increase productivity of warm and cool season vegetable crops, small fruit crops, and deciduous tree fruit crops. Storage of crops after harvest. Prereq: 230. 2 hours lecture and 2 lab hours.

435 Field and Forage Crops (3) Agronomic principles of crop production and management. Crop improvement, cropping systems, tillage, fertilization, pest management, harvest and utilization of major field and forage crops. Prereq: 230. 2 hours and 1 lab.

436 Plant and Garden Photography (2) Principles and techniques of photography as they relate to plants and gardens. Some equipment functions and field shooting under weather conditions and in different seasons. Prereq: Senior standing and consent of the instructor.

437 Public Garden Operations and Management (3) An analysis of year-round operations and management of public gardens. Case studies involving time and labor management, budget development and management, implementation of volunteer programs, information dissemination methods for public outreach, management of grounds and facilities using the University of Tennessee Institute of Agricultural Gardens as a model. Prereq: 326.

440 Advanced Turfgrass Management (4) Principles and scientific basis of turfgrass culture, including physiology, soil fertility, and grass nutrition; climatic influences on grass culture; physiology of clipping and water management; design, construction, and management of golf courses; physiological influences of pest infestation and control measures. Prereq: 340 or consent of instructor. 3 hours and 1 lab.

446 Horticultural Therapy (3) Introduction to the application of horticulture as therapy for treatment, rehabilitation and/or training of individuals with disabilities. Senior standing and consent of the instructor.

450 Specialty Landscape Construction (3) Methods of design, materials, and construction techniques for specialized components of the landscape industry. Irrigation systems, outdoor lighting, garden ponds and water features.

451 Plant Tissue Culture (3) (Same as Botany 451.)

453 Principles of Plant Breeding (3) Genetic principles and techniques used in crop improvement. A consideration of breeding methods for the various types of plant reproduction systems and their application. A discussion of heritability estimation, genetic advances through selection and the theory upon which breeding methods are based. Prereq: Plant Sciences and Landscape Systems 471 and Biology 240. 2 hours lecture and one 2-hour lab.

460 Professional Practices in Landscape Construction and Management (2) Professionalism, salesmanship, proposals, bidding, estimating, specifications, and contract management in landscape services industry. Computer technology applicable to landscape construction and contracting industry. Includes presentations by industry representatives. Prereq: 350 or consent of instructor. 2 hours.

471 Statistics for Biological Research (3) Notation, descriptive statistics, probability, distributions, confidence intervals, student’s t- and chi-square tests, analysis of variance, mean separation procedures, linear regression and correlation. Prereq: Mathematics 125 or equivalent. 3 hours and 1 lab.

480 Advanced Landscape Design (3) Comprehensive application of landscape design skills to a variety of project experiences with an emphasis on landscape planning and analysis, planting design, and materials estimating. Prereq: 280, 380. 2 hours lecture and 3 hours laboratory.

485 Computer Aided Landscape Design (3) Overview of Computer Aided Design (CAD) as it relates to landscape design and construction. Emphasis on development of landscape design drawings through utilization of LANDCAAD software. Prereq: 280, 380, and Agriculture and Natural Resources 290.

490 Seminar (1) Current topics in horticulture, crop sciences, and landscape design. Prereq: Senior Standing.

492 Internship in Horticultural and Plant Sciences (1-3) Supervised work experience with a departmentally-approved employer within the ornamental horticulture, turfgrass production horticulture, or field crop science industry. May be repeated. Maximum of 6 credits.

493 Problems in Horticultural and Plant Sciences (1-3) Supervised individual problems relating to plant scientific landscape design. May be repeated. Maximum of 6 credits.

494 Professional Horticultural Communications (3) Communication for public horticulturists through written, oral, and visual media. Emphasis on communication skills using proper writing techniques and grammar for print media, brochure design using desktop publishing, slide show development, oral presentations, and video use for educational and informational presentations in Ornamental Horticulture. Prereq: Agriculture and Natural Resources 290 and senior standing.

POLITICALSCIENCE(801)

101 United States Government and Politics (3) Introduction to fundamental institutions and processes of American National Politics including the Constitution, voting, the Presidency, the Congress and the courts.

102 Introduction to Political Science (3) Introduction to politics and political systems.

107 Honors: United States Government and Politics (3) Analysis and exploration of the American political system for students with superior ability. Admission by permission of department for students with at least a B average; entering freshmen accepted on basis of strong placement scores and high school record.

300 Introduction to Political Philosophy (3) An introduction to the concepts, enduring questions and significant thinkers associated with political philosophy with specific attention to differing conceptions of human nature, politics, the state, civic obligation and rights, freedom justice and democracy.

311 Contemporary Issues in American Public Policy (3) Selected public policy issues confronting the nation, including the background, nature, and effects of present policies, and options for the future. Writing-emphasis course.

312 Popular Culture and American Politics (3) Popular culture related to American politics and government focusing on the role of film, television, fiction, music, drama, art and sports. Writing-emphasis course. (Same as American Studies 312 and Cinema Studies 312.)

315 Tennessee Government and Politics (3) Major elements in Tennessee government and politics.

320 State Government and Politics (3) Setting, institutions, and processes of government in the fifty states: generalizations and comparisons, with emphasis on federalism and intergovernmental relations.


330 Law in American Society (3) Law as a process through which social problems are addressed in the United States. Examples from case law, legislation, and administrative regulation. (Same as Legal Studies 330.)

340 Introduction to Public Administration and Public Policy (3) Public agencies, their organization, personnel, and financial management and administrative responsibility; the policy-making process, political environment.

350 Political Change in Developing Areas (3) Characteristics and problems of political change with primary focus on developing areas. Writing-emphasis course.

361 Politics in Western Democracies (3) Political culture patterns, and institutions of Western democratic systems. Writing-emphasis course.

365 Introduction to International Relations (3) Resource availability, international economics, international security and peace (imperialism, war, diplomacy, the balance of power, international law and international organization.) Writing-emphasis course.

366 United States Foreign Policy Process (3) Processes whereby United States foreign policies are made and implemented, focusing on interaction within federal bureaucracy and roles of the President, Congress, the press, and public opinion.

370 Contemporary International Problems (3) Analysis of current international events.

374 American Political Thought (3) Major themes and ideas in American political thought related to the development of American political institutions, values, and practices.

387-388 Junior Honors Seminar (3,3) Required of honors majors; admission with consent of department.

401 Political Analysis (3) Nature, character, and functions of research design, data collection, and statistical techniques used in the study of politics. (Same as Legal Studies 401.)

410 Special Topics in Political Science (3) May be repeated with consent of department. Maximum 6 hours.


420 Political Attitudes and Behavior (3) Systematic examination of political attitudes, public opinion and political behavior. (Same as American Studies 420.)

421 Political Parties and Interest Groups (3) Analysis of political parties, interest groups, campaigns and elections.

430 United States Constitutional Law: Sources of Power and Restraint (3) Judicial review, constitutional powers of the President and Congress, federalism, sources of regulatory authority, and constitutional protection of political and economic rights. (Same as Legal Studies 430.)

431 United States Constitutional Law: Civil Rights and Liberties (3) Current issues in civil rights and liberties including: first amendment freedoms, equal protection, privacy and the rights of the accused. (Same as Legal Studies 431.)

435 Criminal Law and Procedure (3) An overview of substantive and procedural law in American justice field with emphasis on constitutional questions and public policy issues. (Same as Legal Studies 435.)

440 Public Management and Human Resources (3) Semester long simulation of a public organization in which student groups plan, organize, direct, teach and evaluate within a tightly structured framework.

441 Public Budgeting (3) The process, participants, and politics of government budgeting, with emphasis on federal government budgeting. Includes an overview of budget formulation and its effectiveness.
442 Administrative Law (3) Legal dimensions of administrative power and procedures, and constitutional controls over administrators. (Same as Legal Studies 442.)

451 Ethnic Conflict in Foreign Countries (3) Examines political and violent conflict among ethnic and national groups and the challenges these conflicts pose for democratic and democratizing states.

452 Black African Politics (3) Recent evolution and current political environment of Black African nations. Writing emphasis course. (Same as African and African-American Studies 452.)

454 Government and Politics of China and Japan (3) Political setting, structure and political processes in China and Japan. Writing emphasis course.

456 Latin American Government and Politics (3) Introduction to the political development of Latin America with an emphasis on contemporary politics. Writing emphasis course. (Same as Latin American Studies 456.)

459 Government and Politics of Russia and Eastern Europe (3) System transformation, political processes and governmental structure in Russia and Eastern European countries. Writing emphasis course.

461 Policy Making in Democracies (3) Comparative approach to theory and process of making public policies.

463 Contemporary Middle East Politics (3) Governments and movements in the Middle East, their characteristics, bases, and interrelationships.

470 International Law (3) Nature and development of international law and compliance with it. Particular attention to function of international law in the context of international conflict. (Same as Legal Studies 470.)

471 International Political Economy (3) The politics of international economics. Topics include globalization, development, trade, crime, the IMF, the WTO, the environment and challenges to the status quo.

473 Negotiation, Bargaining and Diplomacy (3) Negotiation, and foreign policy decision-making. Theories of diplomacy and negotiation are applied in a simulation focusing on issues from international crime and global economic stability to world health and the environment.

474 International Organization (3) Constitutional framework and key functions of the United Nations. Topics include collective security, peacekeeping, human rights, development, regional organizations, and the role of the Secretary-General.

475 Ancient and Medieval Political Thought (3) Major western political thinkers from Socrates to Marsilius of Padua. (Same as Medieval Studies 475.)

476 Modern Political Thought (3) Major western political thinkers from Machiavelli to Marx.

487-488 Senior Honors Thesis and Seminar (3,3) Required of honors majors; admission with consent of department.

490 Internship (1-15) Career-related experiences in the United States or abroad with permission of the Language and World Business Director. For Language and World Business majors only. Satisfactory/No Credit grading only.

491 Foreign Study (1-15) Foreign Study (1-15)

493 Independent Study (1-15) Independent Study (1-15)

PSYCHOLOGY (830)

110 General Psychology (3) Introduction to primary approaches to the study of human behavior and experience.

117 Honors General Psychology (3) Open to University Honors Students and to students with ACT’s of 29 or higher (or SAT equivalent). Prereq: Consent of instructor.

210 Biological Basis of Behavior (3) Survey of theories and research concerning the role of genetic factors, nervous and endocrine systems, and other biological influences on behavior. Prereq: 110.


295 Research Analysis in Psychology (3) An introduction to the research methods and data analysis used in psychological research. This course should be taken as soon as possible after declaring psychology a major. Prerequisite: 110.

300 Child Psychology (3) The normal child from conception through infancy, childhood, and adolescence. Physical, cognitive, social, and emotional development. Prereq: 110.

310 Learning and Thinking (3) Survey of theory and findings of research concerning both humans and nonhumans. Prereq: 110.

320 Motivation (3) Survey of theories and related research; discussion of applications. Prereq: 110.


347 Honors Seminar (1) Classic works in psychology; professional and ethical issues in psychology; presentations of faculty scholarship and honors students’ projects. Meets weekly. Prereq: Consent of instructor. May be repeated. Maximum 8 hours.

360 Social Psychology (3) Theories, methods, and findings of research concerning individual behavior in a social context. Prereq: 110.

367 Psychology Honors Project (3) Independent studies course which leads to the Honors thesis. Students must have plans of study approved by their mentor prior to enrollment. Prereq: Consent of instructor. Satisfactory/No Credit grading only. May be repeated. Maximum 15 hours.

370 Ethology and Sociobiology (3) (Same as Ecology and Evolutionary Biology 370).

382 Contemporary Topics in Psychology (3) Current issue or problem, such as architectural psychology, impact of technology, artificial intelligence, or stereotypes. Different topic each semester. Prereq: 110 and upper-division standing (30 or more semester hours). Maximum of 6 hours may be applied toward major. May be repeated.

385 Statistics in Psychology (3) Descriptive statistics; logic of hypothesis-testing and statistical inference. Basic parametric and nonparametric tests. Not open to students with credit in Mathematics 115 or Statistics 201.

395 Methods of Research in Psychology (3) Fundamentals in the design, conduct, and interpretation of research, including systematic observation, experiments, quasi-experiments, and program-evaluations. Focus on both laboratory and natural settings. Prereq: 110 and 385 or Mathematics 115 or Statistics 201; and Junior standing (60 semester hours).

399 Supervised Research and Field Work (1-3) Field experience in community-based research and service settings. Prereq: Consent of instructor. Note: Any combination of 6 hours of 399, 489, 491, 492, 493 may be used in major. An additional 6 hours may be used as elective. May be repeated.

400 Cognitive Psychology: Language and Symbolic Processes (3) Psychology of knowing, explaining, and understanding. Directed and associative thinking, memory, problem-solving, and creative thinking. Nature, use, and development of language. Prereq: 110 and Junior standing (60 semester hours) or consent of instructor.

409 Group Facilitation (3) Study of theory and technique through supervised experience in small groups. Prereq: 110 and Junior standing (60 semester hours) or consent of instructor. May be repeated. Maximum 6 hours.

410 Sensory Processes and Perception (3) Physiological and psychological theories of perception. Emphasis on audition and vision. Prereq: 110 and Junior standing (60 semester hours) or consent of instructor. Psych 385 or Math 115 or Statistics 201 or Graduate standing.

415 Psychology of Religion (3) History of the psychology of religion with an examination of the psychological and empirical orientations. Exploration of the psychological function of religion for individuals and society. Prereq: 110 and Junior standing (60 semester hours) or consent of instructor. (Same as Religious Studies 415.)

420 History and Systems of Psychology (3) History of psychological thought. Classical approaches and recent developments. Prereq: 110 and Junior standing (60 semester hours) or consent of instructor or graduate standing.

424 Psychology and the Law (3) Psychological aspects of legal systems. Prereq: 110 and Junior standing (60 semester hours) or consent of instructor or graduate standing.
430 Health Psychology (3) Psychological factors related to health and illness, including stress, personality, and environment. Applications of psychological treatments to physical illness. Prerequisite: 110 and Junior standing (60 semester hours) or consent of instructor.

434 Psychology of Gender (3) Biological, psychological, and social factors in gender. Importance of gender roles and stereotypes for behavior and experience. Prerequisite: 110 and Junior standing (60 semester hours) or consent of instructor. (Same as Women’s Studies 434.)

440 Organizational Psychology (3) Social-psychological analysis of organizations, emphasizing role-theory and systems theory. Prerequisite: 110 and 360 and Junior standing (60 semester hours) or consent of instructor. (Same as Management 440.)

445 Measurement and Testing (3) Theory of test construction and psychological measurement. Statistical methods in measurement. Survey of existing tests. Prerequisite: 110. Psych 385 or Math 115 or Statistics 201 and Junior standing (60 semester hours) or consent of instructor.

446 Advanced Measurement and Testing (3) Emphasis on mental test theories including classical test and item response theories. Prerequisite: 445.

450 Comparative Animal Behavior (3) (Same as Ecology and Evolutionary Biology 450.)

459 Comparative Animal Behavior Laboratory (3) Coreq: 450. (Same as Ecology and Evolutionary Biology 459.)

461 Physiological Psychology (3) Nervous system and physiological correlates of behavior. Biological basis of emotion, learning, memory and stress. Prerequisite: 110 and Junior standing (60 semester hours) or consent of instructor. One of the following three sequences: Biology 101 and 102, Biology 130 and 140, Anthropology 110 and 210.

467 Psychology Honors Thesis (3) Independent study for writing and oral defense of Honors thesis. Prerequisite: consent of instructor. Satisfactory/No Credit grading only.

470 Theories of Personality (3) Major theories of human personality and their development. Prerequisite: 110 and Junior standing (60 semester hours) or consent of instructor.

475 Adolescent Development (3) Theoretical perspectives and empirical research findings pertinent to adolescent development. Prerequisite: 110 and Junior standing (60 semester hours) or consent of instructor.

480 Theories of Learning (3) Classical and current approaches to learning and cognition. Prerequisite: 110 and Junior standing (60 semester hours) or consent of instructor.

482 Topics in Psychology (3) Intensive analysis of special topics, such as African-American Psychology or evaluation of programs in the community. Prerequisite: 110 and Junior standing (60 semester hours) or consent of instructor. No more than 6 hours of Psych 382 and Psych 482 may count towards the major. An additional 6 hours of Psych 382 and 482 may count as electives. May be repeated.

489 Supervised Research (1-9) Prerequisite: Junior standing (60 semester hours) and consent of instructor. Note: Any combination of 6 hours of 399, 489, 491, 492, or 493 may be used in this major. An additional 6 hours may be used as electives. May be repeated.

491 Foreign Study (1-15) Prerequisite: Junior standing (60 semester hours) and consent of instructor. Note: Any combination of 6 hours of 399, 489, 491, 492, or 493 may be used in this major. An additional 6 hours may be used as electives. May be repeated.

492 Off-Campus Study (1-15) Prerequisite: Junior standing (60 semester hours) and consent of instructor. Maximum 12 hours in 399, 489, 491, and 493 may be applied toward major. Note: Any combination of 6 hours of 399, 489, 491, 492, or 493 may be used in this major. An additional 6 hours may be used as electives. May be repeated.

493 Independent Study (1-15) Prerequisite: Junior standing (60 semester hours) and consent of instructor. Note: Any combination of 6 hours of 399, 489, 491, 492, or 493 may be used in this major. An additional 6 hours may be used as electives. May be repeated.

496 Senior Seminar: Great Ideas in Psychology (3) Key ideas that have shaped conceptions of humankind. Exploration of historical development, scientific evolution, and larger social context. Prerequisite: Senior standing (90 semester hours). Writing-emphasis course.

PUBLIC HEALTH (839)

300 Introduction to Public Health (3) Aspects of public health including discussion of contemporary and controversial health issues.

305 Disease Epidemiology, Prevention and Control (3) Foundations of epidemiology applied to infectious, acute, and chronic diseases. Emphasis on the applications of public health prevention and control initiatives throughout the disease cycle. Prerequisite: Ecology and Evolutionary Biology 230 and 240.

310 Environmental Management and Control (3) Contemporary principles of control of disease-producing agents in our environment. Emphasizes concepts for effective application of control principles to vocational endeavors and/or daily living activities. Includes: Drinking water quality (chemical, physical and biological), waste management (liquid, solid and hazardous), vector control, safe food management, recreational sanitation and safety to include pool management, shelter hygiene (homes, child care, schools, hospitals, etc.), occupational health and safety.

400 Consumer Health (3) (Same as Health 400.)

410 Worksite Health Promotion (3) Foundations of health promotion programs delivered in the worksite that revolve around issues relative to employees and management. Emphasis on theory, program design, implementation, and evaluation from the perspective of health promotion specialist. Prerequisite: 300.

493 Directed Independent Study (1-3) Individual study of selected issues. Prerequisite: Consent of instructor. May be repeated. Maximum 6 hours.

PUBLIC RELATIONS (841)

270 Public Relations Principles (3) Theories and principles of public relations. Overview of students' relations in management, business, government, institutions and organizations. Brief case studies and public relations projects.

320 Public Relations Communication (3) Mechanics of effective writing for various media to achieve organizational goals. Overview of governing communication and persuasion theories. Focus on implementation of research-based, planned and managed techniques in public relations. Prerequisite: 270 or Advertising 250, and Journalism 200, or consent of instructor.

370 Public Relations Cases (3) Oral and written analysis of current and classic case studies in public relations. Ethics, professional organizations, publications, research and forms of public relations. Methods of communication and persuasion. Prerequisite: 270.

412 Opinion Writing (3) (Same as Journalism 412.)

416 Issues in Public Relations (3) Topics vary. May be repeated. Maximum credit 6 hours. Prerequisite: Consent of instructor.

470 Public Relations Campaigns (3) Research, planning and communication and evaluation of major public relations campaigns. Oral and written presentation of a public relations project from inception to completion. Extensive out-of-class work. Prerequisite: 320 and consent of instructor.

491 Foreign Study (1-15) Advance approval of hours and topics by advisor required for registration. May be repeated for maximum of 15 hours credit.

492 Field Experience (1-2) Approved internships and other supervised practice in public relations. May be repeated for a maximum of 4 credit hours. Prerequisite: 320, senior standing, and consent of instructor. Satisfactory/No Credit grading only.

493 Independent Study (3) May be repeated for maximum of 6 hours. Prerequisite: Consent of instructor.

READING EDUCATION (847)

329 Teaching Developmental Reading in the Elementary and Middle Schools (3) Methods and background on how to teach word recognitions skills, comprehension, study skills, and how to use materials. Includes units on phonics, evaluation, and basic readers. For BS Education students only. Prerequisite: Admission to Teacher Education Program.

430 Elementary and Middle School Developmental Reading Instruction (2) Word recognition (including phonics), comprehension, evaluation, and materials. Not open to students who have had recent course in reading methods. Prerequisite: Admission to Teacher Education Program.

434 Topics in Reading Education (1-6) May be repeated. Maximum 6 hours. Prerequisite: Admission to Teacher Education Program as a course in Reading Education.

440 Literacy Instruction in the Middle Grades (2) Problems and issues particular to teaching reading in the middle grades including teaching reading in an integrated curriculum, dealing with students reading below grade level, and teaching concept vocabulary.

461 Developing Reading Skills in Content Fields (3) Teaching reading and study skills in content areas of the school program. Extensive assessment of textbooks. Emphasis on middle school and high school.

RECREATION N AND LEISURE STUDIES (853)

201 Leisure Foundations and Leadership (4) Introduction to the field of leisure, recreation, and leisure focusing on understanding concepts, philosophies, and professional practices in the leisure service industry. Theories and practices of recreation leadership.

290 Practicum in Recreation and Leisure Studies (2-3) Supervised practice in approved agencies offering programs in recreation and tourism. Each hour of credit requires 40 clock hours of work. For majors only Prerequisite: Permission of instructor. Satisfactory/No Credit grading only.

310 Development and Evaluation of Recreation and Leisure Programs (3) Essential elements and principles in the organization, administration, marketing, and evaluation of various types of recreation programs. Emphasis on development of program objectives. Practical and comprehensive program designs and evaluation for population and facility within students’ area of interest. Prerequisite: 201, Junior standing, GPA required for admission to major.

320 Therapeutic Recreation and Special Populations (3) Principles, concepts, historical development of recreation, therapeutic recreation, and leisure services to special populations. Explanation of legislation, attitudes, barriers to participants, mainstreaming, advocacy, as related to leisure fulfillment. Prerequisite: Consent of instructor.

325 Therapeutic Recreation and Lifestyle Planning (3) Emphasis on how therapeutic recreation specialists can use the application of healthy lifestyle principles as a treatment modality. Importance and role of recreation/leisure participation (honor, stress-management, self-responsibility, fitness) in planning and delivery of therapeutic recreation service for individuals with disabilities. Prerequisite: Consent of instructor.

390 Practicum in Recreation and Leisure Studies (2-3) Supervised practice in approved agencies offering career opportunities in recreation. Each hour of credit requires 40 clock hours of work. Only for majors in Recreation and Leisure Studies. Prerequisite: 290 and permission of instructor. Satisfactory/No Credit grading only.

410 Management Concepts of Recreation, Leisure and Sport Programs (3) Principles for operationalizing recreation, leisure and sport related programs. Units address utilizing research as a management tool, assessing program cost, facility utilization and evaluation and contemporary management concepts. Prerequisite: 201, 310, or consent of instructor.
415 Development and Maintenance of Recreation, Leisure and Athletic Facilities (3)
Principles of designing, planning, equipping, operating and maintaining various facilities. Elements of risk management and safety are incorporated into the design process. Prereq: 310, Sport Management 350, or consent of instructor.

420 Principles of Therapeutic Recreation (3) Principles and practices in therapeutic recreation, including activity analysis, activity and program selection, individual and program assessment, treatment plans, documentation, and professional issues. Prereq: 320 or consent of instructor.

425 Therapeutic Recreation Programming (3) Principles and practices of therapeutic recreation programming for individuals with various, and multiple disabilities. Focus is on the social, interpersonal, and behavioral aspects of working with individuals in inclusive therapeutic recreation environments. Includes lab. Prereq: 320 and/or consent of instructor.

430 Organization and Administration of Leisure Studies (3) Principles of administration applied to recreation and tourism services offered by public, private, and/or commercial enterprises. Organizational structures, personnel management, evaluation, legal authority, introduction to budgeting and fiscal procedures. Prereq: 310 or consent of instructor.

440 Dimensions of Commercial Recreation and Leisure Enterprises (3) Organizational structures, delivery systems, financing private enterprises and operating selected profit centers in a variety of settings. Special attention is given to market performance and economic impact. Prereq: 201, junior standing, or consent of instructor.

450 Special Topics in Leisure Education (1-6) Development of special topics in Recreation/Therapeutic Recreation and Leisure. May be repeated.

470 Tourism and Leisure Industries (3) An examination of the symbiotic relationship between leisure and tourism and the influence of leisure and tourism on the local and national economy. Topics include the history of tourism, contemporary tourism, and the economic impacts of these ventures. Sociocultural impacts upon the venue and how the venue impacts the local population.

490 Internship in Recreation and Leisure Studies (12) Full time practice in approved recreation, sport or tourism management agency. Emphasis on supervisory and administrative procedures. Prereq: 310; 290, all 300-level courses, senior standing, GPA required for major. Satisfactory/No Credit grading only.

493 Directed Independent Studies in Recreation and Leisure Studies (1-3) May be repeated.

RELIGIOUS STUDIES (863)

101 World Religions in History (3) Introduction to religion in culture and society, including examination of religious traditions from China, India, and the Mediterranean world. Writing-emphasis course.

102 The Comparison of World Religions (3) Introduction to religion in culture and society, focusing on cross-cultural interpretation and the treatment of common problems and themes within religious traditions. Writing-emphasis course.

232 Varieties of Religious Community (3) How different forms of religious communities (cults, tribes, sects, monastic orders, denominations, familial, etc.) have sought to reject, reinforce, transform, ignore, or dominate their culture and society. (Same as Sociology 232.)

300 Ways of Understanding Religion (3) Sources and methods used in the study of religion and religions; analysis of approaches to the study of religion. Writing-emphasis course.

301 Religious Myth, Symbol, and Ritual (3) Distinctive modes of religious expression and analysis of theoretical approaches appropriate to their particular social and cultural functions in religions.

302 Anthropology of Religion (3) Religions of selected non-literate peoples. Role of religion in their social and cultural systems. (Same as Anthropology 302.)

305 Modern Religious Thought (3) Major themes, issues, and thinkers of twentieth and/or twentieth century religion. Variable content. May be repeated. Maximum 6 hours.

309-310 Intermediate Classical Hebrew (3,3) Basic elements of Hebrew phonology, script, morphology and syntax. Introduction to basic elements of text, form, and literary criticism.

311 Ancient Hebrew Religious Traditions (3) Development of ancient Israelite and early Jewish traditions with emphasis on those concerning the Exodus, Davidic kingship, and Zion in historical, prophetic and apocalyptic material. Writing-emphasis course. (Same as Judaic Studies 311.)

312 Religious Aspects of Biblical and Classical Literature (3) Ways in which contemporary modes of literary study enhance appreciation of biblical and classical material. Ways in which the western literary tradition has appropriated and recast the biblical and classical heritage. Writing-emphasis course. (Same as Judaic Studies 312.)

313 Religious Aspects of Modern Literature (3) Issues raised for religious inquiry in contemporary literature. Relation of religious and moral considerations to problems of literary analysis; relation between religious language and forms of human expression (symbol, metaphor, myth, image) identified in study of literature. Writing-emphasis course.

315 Reformation Europe, 1500-1650 (3) (Same as History 315.)

320 Women and Religion (3) Concepts of gender in religious traditions, religions, social and psychological dimensions of gender-related symbols (e.g., the Goddess, God the Father) that shape women’s and men’s experiences; contemporary feminist discussions of ways in which religions have liberated and oppressed women. (Same as Women’s Studies 320 and Judaic Studies 320.)

321 New Testament Origins (3) Influence of pre-Christian Judaism and Greek culture and philosophy on early Christianity. Motivations and guiding concepts which led to the formation of the New Testament. Victory of the Christian Church over the forces of persecution and the Constantinian settlement (311 A.D.). Writing-emphasis course. (Same as History 321.)

322 Christian Thought (3) Principal forms of Christian thought and institutions through the interpretation of representative thinkers and movements from Augustine of Hippo to Immanuel Kant. Writing-emphasis course. (Same as History 322.)

326 Images of Jesus (3) Major portrayals of Jesus Christ from the first century to the twentieth century in the context of the cultural milieu which gave birth to each. Extensive use of slides, video material, recordings, and literature.

329-330 Intermediate Classical Hebrew (3,3) Readings in narrative material from the Hebrew Bible. (Same as History 320.)

332-333 Intermediate Classical Hebrew (3,3) Readings in narrative material from the Hebrew Bible. (Same as History 320.)

333 Islam in the Modern World (3) Beginning with the Wahhabi revolution (ca. 1773 CE), this course examines movements of revival and reform in modern Islam, as well as worldwide missionary activity and the growth of the Islamic community in the US. Prereq: Religious Studies 332 or consent of instructor. (Same as Asian Studies 333.)

342 Religious Ethics (3) Selected ethical theories and moral teachings of religious communities and thinkers, their action-guides for individuals and institutions, their application to persons and social problems.

344 Professional Responsibility (3) (Same as Philosophy 344 and Legal Studies 344.)

345 Bioethics (3) (Same as Philosophy 345.)

351 Introduction to Religion in the United States (3) A representative profile of religion in the United States, organized around selected focal themes or problems. Writing-emphasis course.

352 African-American Religion in United States (3) Historical and critical examination of formation and development of African-American religious thought and institutions in America. Writing-emphasis course. (Same as African-American Studies 352.)

353 Topics in African-American Religion (3) Selected figures, themes, movements, or problems in the African-American religious tradition. Variable content. May be repeated. Maximum 6 hours. (Same as African-American Studies 353.)

355 Religion and Culture in the United States (3) Selected figures, movements, and problems in American religious life, thought, and culture from pre-colonial period to present. Prereq: 351 or consent of instructor. May be repeated. Maximum 6 hours. Writing-emphasis course. (Same as American Studies 355.)

370 Philosophy of Religion (3) (Same as Philosophy 370.)

373 African Religions (3) Religions of the indigenous peoples of Africa, including how myth, rites, and symbols and certain cultural and political movements in Africa have been and are being informed by religious sensibilities. Writing-emphasis course. (Same as Anthropology 373 and African-American Studies 373.)

374 Philosophy and Religion in India (3) Survey of the development of the major non-Buddhist themes of philosophical and religious thought in India. Writing-emphasis course. (Same as Philosophy 374.)

376 Buddhist Philosophy and Religion (3) Survey of the origins of Buddhism in India and further development of Buddhist philosophy and religion in India, China, Korea, Japan, the countries of Southeast Asia, and beyond. Writing-emphasis course. (Same as Philosophy 376.)

378 Theravada Buddhism (3) Historical study of the Theravada Buddhist tradition in South and Southeast Asia. Focus will be on the cult of the Buddha in Theravada Buddhism, the Theravada interpretation of key Buddhist concepts as found in the Pali canon, and the reciprocal relationship between monks and lay persons in the tradition.

379 Religion and Philosophy in China (3) Traditional thought and religion of China in its cultural setting as basis for understanding modern China. Writing-emphasis course. (Same as Philosophy 379.)

380 East Asian Buddhism in Asia and North America (3) An overview of the distinctive forms of Buddhism that arose in China, Japan, and Korea, as well as an introduction to their offshoots in North America.

381 Introduction to Judaism (3) History, traditions, philosophy and religion of the Jewish people grounded in the ancient period, but includes diaspora, emancipation and haskalah. Writing-emphasis course. (Same as Judaic Studies 381.)

382 Religion and Culture in Southeast Asia (3) Historical study of the major religions in Southeast Asia, including indigenous traditions, Hinduism, Buddhism, Islam and Christianity. Focus will be on the historical interplay between religion, culture, and society and the expression of these traditions.

383 Religion in Japan (3) Traditional religious heritage and contemporary expressions of religion in Japan with attention to relationships of persons to nature, self-mastery and spontaneity, individual and community and secular to sacred. Writing-emphasis course.

384 Zen Buddhism (3) Historical, philosophical, and meditational aspects of Zen. Special emphasis on motifs of emptiness, no-mind, and enlightenment and on practices of meditation and the use of the koan. Recommended Prereq: One or more of the following: 376, 379, 383.

385 Contemporary Jewish Thinkers (3) Renewal trends in Nineteenth and Twentieth-Century Judaism. May be repeated. Maximum 6 credit hours. Writing-emphasis course. (Same as Judaic Studies 385.)

386 Voices of the Holocaust (3) Historical underpinnings of Nazi genocides such as that of the Jewish people, Gypsies, homosexuals, and homosexuals. Economic, religious, social, and philosophical trends supporting massive genocide. (Same as Judaic Studies 386.)

389 Literature of the English Bible (3) (Same as English 389.)
RETAIL AND CONSUMER SCIENCES (865)

102 Microcomputer Applications (3) Introduction to Microcomputer use and five software programs: operating systems, word processing systems, data base systems, spreadsheet programs and graphics programs; design of a management information system; spreadsheets, word processing, and database. Prereq: Declared major in College of Human Ecology. Satisfactory/No Credit grading. (Same as HRA 102.)

119 Introduction to the Service Industry (3) (Same as HRA 119.)

210 Introduction to Retail Management (3) Development and overview of retailing, major business trends, and operations in retailing. Prereq: Consent of instructor. May be repeated. Maximum 6 hours.

493 Independent Study (1-15) Selected figures, themes, movements, and problems. Prereq: Consent of instructor. Variable content. May be repeated. Maximum 6 hours.

499 Proseminar in Religious Studies (3) For advanced students in Religious Studies; required for majors. Selected topics, e.g., nature and function of myth in religion, problem of evil, transcendence, theories of religion, hermeneutics, integrating various disciplines involved in study of religion. Prereq: Consent of instructor. May be repeated. Maximum 6 hours.

411 Entrepreneurship and Small Business Management (3) Concepts of entrepreneurship within single ownership and other business organizations; development of a business plan; management of a small business; current issues and problems. Prereq: 210, Marketing 300, Accounting 202.

412 Direct Retail Methods (3) Issues concerning the use of direct selling methods to sell goods and services. Emphasizes analysis of consumers and product/service types for integrated direct retail methods. The direct retailing methods in this course include direct mail, catalogs, telemarketing, infomercials, and electronic commerce (internet). Prereq: 210, Marketing 300.

415 Retail Promotion (3) In-store promotional activities; development of retail promotion strategies; evaluation of retail promotions; supplementary focus on advertising and other methods to communicate in-store promotions. Prereq: 210, Marketing 300.

421 International Retail Environments (3) The study and analysis of retailing in an international and global setting. Retail processes, practices and issues within international environments—cultural, economic, social, political, legal and business. Prereq: 210, Marketing 300.

422 Professional Experience in Retail and Consumer Sciences (6) Supervised educational experiences in selected retail and consumer services service operations. Prereq: Progression into the program and 310, 390.

425 Legal Issues in Service Management (3) (Same as HRA 425.)

482 Professional Experience in Retailing II (6) Supervised professional experience in selected retail operations that build upon first professional experience. Prereq: 410, 422.

485 Managerial Issues in Retail Operations (3) Managerial problem solving involving staffing and retention of personnel, conflict resolution, financial analysis, and crisis management. Coreq: 482 or 492. Prereq: 410.

492 Managerial Experience in Retailing (9) Supervised managerial training with sponsoring retail operations. Prereq: 410, 422.

493 Directed Study (1-3) Individual problems for junior and senior students with special interests in retail and consumer sciences. Prereq: Junior or senior standing and consent of the instructor.

495 Special Topics (3) Topics in retail and consumer sciences. Prereq: Junior or senior standing and consent of the instructor. May be repeated. Maximum 9 hours.

497-498 Honors: Retail and Consumer Sciences (1-3) Individual problems for Junior and Senior students showing special ability and interest in retail and consumer sciences. Prereq: Recommendation of department head.

RURAL SOCIOLOGY (880)

380 Rural Sociology (3) Topics include the analysis of U. S. land tenure systems, agricultural regions, rural minorities, Amish, farmer organizations, rural institutions, community decision making, local government, rural policy issues, rural industrialization, food policy, and cross-cultural analysis. Prereq: Sophomore standing. (Same as Sociology 380.)

480 Technological and Community Change (3) Analysis of communication processes whereby new technology spreads within a farm population and analysis of social institutions related to change in rural communities. Prereq: 380 or consent of instructor. (Same as Sociology 480.)

RUSSIAN (886)

101-102 Elementary Russian (4.4) Must be taken in sequence.

199 Russian Language and World Business (2) This course will examine the importance of foreign trade at the local, state, and national levels. An interdisciplinary team of faculty from the colleges of Business and Arts and Sciences will provide an overview of the value of language study and international cultural awareness in world business. Restricted to students in the Language and World Business program. See the Director for further information.

201-202 Intermediate Russian (4.4) Must be taken in sequence.

221 Rebels, Dreamers and Fools: The Outcast in 19th Century Russian Literature (3) Texts in English translation. No foreign language credit. Writing-emphasis course.

222 Heaven or Hell: Utopias and Dystopias in 20th Century Russian Literature (3) Texts in English translation. No foreign language credit. Writing-emphasis course.


311-312 Russian Composition and Conversation (3,3) Practice in writing and speaking; grammar review and vocabulary building. Prereq: Completion of 202.

325 Russian Film (3) A study of Russian cinema from the earliest days to the present. Writing-emphasis course. (Same as Cinema Studies 325.)

371 Martyrs, Mobs, and Madmen in Russian Culture: 988-1861 (3) Explores various aspects of Russian music, art, and literature, emphasizing violent cultural clashes that produced extreme artistic reactions. Texts in English translation. Writing-emphasis course.

372 Modern Russian Culture through Readings and Dramatic Production (3) A survey of Russian culture from the era of Great Reforms of the 1860s through modern times, supplemented by participation in a dramatic production. Texts in English translation; some texts in Russian for Russian majors. Writing-emphasis course.

401-402 Advanced Grammar, Conversation, and Composition (3,3) Prereq: 312 or equivalent.

424 Nabokov's Novels and Stories (3) An intensive course covering several novels and stories, the memoir, and some scientific writings of the prolific Russian-American author. Particular attention given to the author’s philosophical views and the contact between his
science and his art. In English; readings in Russian for majors. Writing emphasis course.

412 Social Work Practice III (3) Generalist practice with emphasis on groups and communities, including treatment theories, techniques, and issues. Prereq: Full progression. Coreq: 416 and 480.


460 Integrative Seminar (2) Social work content for entry-level professional practice and current issues influencing the profession. Includes development of a portfolio reflecting BSW competencies. Prereq: Full progression. Coreq: 481.

480-481 Field Practice in Social Work II, III (6, 6) Sixteen-hour-per-week supervised agency field practicum for integration of theory and practice and critical examination of oneself as a professional helping person. Concurrent field seminar on integration of knowledge with practice experiences. Prereq: Full progression.

491 Foreign Study (1-15) Prereq: Consent of instructor.

492 Off-Campus Study (1-15) Prereq: Consent of instructor.

493 Independent Study (1-15) Prereq: Consent of instructor.

SOCIOLOGY (915)

110 Social Problems and Social Change (3) Increasingly acute and intense problems such as alcoholism, violence, crime, inequality, lifestyle preferences, and environmental abuse within the context of social change. Assessment of control strategies.

117 Honors: Social Problems and Social Change (3) Open to University Honors students and by departmental permission to first year students with 28 or higher ACT or 1200 SAT and other students with a minimum of a 3.0 average.

120 General Sociology (3) Major concepts and theoretical approaches of sociology with emphasis on culture, socialization, social organization, and social stratification.

127 Honors: General Sociology (3) Open to University Honors students and by departmental permission to first year students with 28 or higher ACT or 1200 SAT and other students with a minimum of a 3.0 average.

232 Varieties of Religious Community (3) Same as Religious Studies 232.

250 Introduction to Global Studies (3) Exploration of how globalization is fostering change in culture, politics, economics, philosophy, and the environment. Uses interdisciplinary perspectives to understand the relationship between historic processes and the contemporary world, and the reciprocal influences of local dynamics and global change.

291 Sport in American Society (3) (Same as Sport Studies 291.)

310 American Society (3) Institutional organization of contemporary American society with particular attention to major social values. Writing-emphasis course.

311 Family (3) Theoretical frameworks and methodological approaches; their application in the sociological study of past and present family forms.

320 Interpersonal Communication Processes (3) (Same as Speech Communication 320.)

321 Sociological Theory (3) Survey of contemporary issues and problems in sociological theory with an emphasis on their historical development and their importance for the field. Students are required to form critical appraisals of the topics addressed. Prereq: C+ or better in Sociology 110 or 120 or consent of instructor.

331 Sociological Research (3) Selected issues in philosophy of social science, research design, sampling, methods of data collection, and interpretation. Requires written research report. Prereq: C+ or better in 110 or 120 or consent of instructor. (Same as Legal Studies 331.)

430 Class Structure (3) Class structure and conflict; causes and consequences of structural social inequality. Emphasis on the United States. Writing-emphasis course.

434 Race and Ethnicity (3) Social sources of racial and ethnic cleavages and social, economic, and political consequences. Emphasis on race and ethnicity in the United States. Writing-emphasis course. (Same as African and African-American Studies and American Studies 343.)

444 Power and Society (3) Sociological analysis of the formation and application of nation state policies. Examination of who gets what, why, and how. Emphasis on contrasting explanations of the control of the state and the relative autonomy of the state.

450 Collective Behavior and Social Movements (3) Collective phenomena leading to social change. Response to disaster, popular crazes, and social protests and development, organization, and function of social movements. Emphasis on American cases. (Same as American Studies 345.)

450 Criminology (3) Systemic inquiry into alternative definitions of crime, statistical distribution of different types of crime causation, and responses to crime, primarily by the police.


452 Deviance and Social Control (3) Deviants, their lifestyles, social organization, and social control.

460 Environment and Resources (3) Relationship between scarcity of natural resources and changes in societal beliefs and social structure. Topics include social and physical limits to growth and collective action problems. Writing-emphasis course.

470 Social Psychology (3) Social psychological analysis of social behavior emphasizing its acquisition, its enactment, and its dynamic nature.

475 Gender in Society (3) Exploration of gender in society utilizing various sociological
perspectives with special focus on the relationships between social structures, social roles, and gender identities. (Same as Women’s Studies 375.)

380 Rural Sociology (3) (Same as Rural Sociology 380.)

399 Off-Campus Internship (1-6) Supervised experience at an approved site. Analysis of internship experiences with sociological tools provided through readings and class discussions. Oral and written reports required. Prerequisite: Departmental consent and senior standing in the major. Maximum 6 hours.

400 Special Topics (3) Variable topics. Scope of subject matter determined by students and instructor with consent of department. Prereq: Determined by department. May be repeated. Maximum 6 hours.

405 Sociology of Sport (3) Social meaning, organization, and process of sport. Prereq: 291 or consent of instructor. (Same as Sport Studies 405.)

414 Sociology of Health Care (3) Organization of health care facilities, staff-patient relationships, demographic characteristics, and prevalence of disease.

415 Sociology of Aging (3) How roles and statuses change with age in relation to the major social institutions; the impact that the rapidly increasing number of older people have on society, the effect of society on older people.

442 Comparative Poverty and Development (3) A critical examination of patterns of poverty and inequality in developing areas of the world, along with a review of major sociological theories which attempt to explain differences in patterns of development. Writing-emphasis course. (Same as African and African-American Studies 442.)

446 The Modern World System (3) Critical examination of the capitalist world-system as a social system, its structure, difference, boundaries, regions, member groups, cleavages, and patterns of conflict. Analysis of who gets what, why, and how in the global political economy. Writing-emphasis course.

451 Criminal Justice (3) A critical assessment of the criminal justice apparatus and its components. Brief examination of the police, with most of the emphasis on the criminal courts, civil litigation, and institutions and programs such as the prison, probation, and parole. Analysis of their operation and impacts. Prior completion of 350 is recommended. (Same as Legal Studies 451.)

455 Society and Law (3) How laws and legal processes are affected by social change, the social impact of legal sanctions, relations between law and social justice. Writing-emphasis course. (Same as Legal Studies 455.)

459 Right-Wing Politics (3) The distinctive nature and dynamics of white-collar crime, victims and costs of white-collar crime, organizations as white-collar offenders, causal theories, and the dynamics of responses to white-collar crime by private and public parties.

462 Population (3) Demographic factors and social structure; trends in fertility, mortality, population policy, distribution, population politics, migration, and urbanization. Writing-emphasis course. (Same as Urban Studies 462.)

464 Urban Ecology (3) The relation of humans to their urban environment with emphasis on conservation and the use of appropriate technology. (Same as Urban Studies 464.)

465 Social Values and the Environment (3) Human dimensions of ecosystem management and public policy. An applied focus on how social values are activated within specific social contexts and the role of social values in shaping public policy decision-making. Writing-emphasis course.

471 Sociolinguistics (3) (Same as English and Linguistics 471.)

491 Foreign Study (1-15) Prereq: Advance departmental approval of number of hours and topics. May be repeated. Maximum 15 hours.

492 Off-Campus Study (1-15) Prereq: Advance departmental approval of number of hours and topics. May be repeated. Maximum 15 hours.

493 Independent Study (1-15) Prereq: Advance departmental approval of number of hours and topics. May be repeated. Maximum 15 hours.

SPANISH (924)

111-112 Elementary Spanish (3,3) Language laboratory required. Must be taken in sequence. Not available to students eligible for Spanish 150.

150 Intermediate Spanish Transition (3) This course is designed to prepare students for enrollment in Spanish 211. Prereq: Two years of high school Spanish a placement score below the level required for admittance to Spanish 211. This class will not count toward the College of Arts and Sciences intermediate-level foreign language requirement. Since 150 is a review of elementary Spanish, students who receive credit in this course may not also receive credit for any other 100-level Spanish course and therefore also forfeit the six hours of elementary language credit awarded through placement examination. For elective credit only.

199 Spanish Language and World Business (2) The course will examine the importance of foreign trade at the local, state, and national levels. An interdisciplinary team of faculty from the Colleges of Business and Arts and Sciences will provide an overview of the value of language study and international cultural awareness in world business. Restricted to students majoring in the program in Language and World Business. See the Director for further information.

211-212 Intermediate Spanish (3,3) Prereq: 150 or 112 or Departmental Placement Exam. Must be taken in sequence. Students who place in 200 level courses from high school will receive six hours of elementary Spanish credit.

217-218 Honors: Intermediate Spanish (3,3) Honors course for students of superior ability in Spanish. Incoming freshmen are admitted on the basis of a diagnostic test, high school average and performance on the ACT. Classes normally held to a maximum of 15 students. Students follow enriched program with continuous emphasis upon speaking ability and with an introduction to reading literary selections. Students who earn an A or B in 218 receive credit for 300. Prereq: 111-112 or equivalent.

300 Transition: Composition and Grammar through Reading (3) Provides preparation in writing skills and exercise in key elements of grammar through the development of reading comprehension, vocabulary acquisition, and compositions on assigned topics. Available to non-native or non-bilingual students of Spanish only. Prereq: 212 or equivalent or appropriate score on Spanish placement test.

305 Conversation and Aural Comprehension (3) Develops speaking and listening comprehension skills through a variety of in-class and extra-class activities. Not available for credit for students whose level of proficiency in Spanish is superior as defined by the ACTFL Proficiency Guidelines. Prereqs: 212 or 218 or permission of department.

321 Upper-level Grammar and Composition (3) Study of the more challenging grammatical issues in Spanish with practical application in composition assignments. Any review of basic grammar has proved to be an effective means of increasing the overall proficiency of students. Prereqs: 211:218 or 330 or permission of department. Writing-emphasis course.

330 Textual Analysis (3) Introduction to the art of reading and interpreting literary texts and the writing of critical essays, with attention to language structures, literary terminology, theory and concepts such as romance, tragedy, comedy, irony, narrative voice, symbol, metaphor, etc. with application to works such as short stories, one-act plays, essays, and letters. Prereq: 323. Writing-emphasis course.

331 Introduction to Hispanic Culture (3) Introduction to the fundamental historical, political and demographic developments that led to the creation, geographic and distinctive character of Hispanic cultures, with attention to those qualities that distinguish Hispanic culture from other cultures, as well as to ethnic and linguistic components of the Hispanic world in the present day. Prereq: 323. Writing emphasis course. (Same as Latin American Studies 331.)

332 Survey of Spanish Literature: 1700-Present (3) Main writers, trends, stylistic periods and artistic movements in Spain since 1700 set against a broad background of cultural, socio-political and historical developments. Emphasis on Neo-classicism, the Romanticism, modernismo, the avant-garde of the 1920’s and 1930’s, social realism, women writers, and contemporary developments. Prereqs: 323 and 330. Writing-emphasis course.

333 Survey of Spanish-American Literature: 1700-Present (3) Main writers, trends, stylistic periods and artistic movements in Spain since 1700 set against a broad background of cultural, socio-political and historical developments. Emphasis on Neo-classicism, the Romanticism, modernismo, the avant-garde of the 1920’s and 1930’s, social realism, magical realism, the Latin American boom, women writers, and contemporary developments. Prereqs: 323 and 330. Writing emphasis course. (Same as Latin American Studies 333.)

334 Survey of Hispanic Literatures: Beginnings-1700 (3) Main writers, trends, stylistic periods and artistic movements in Spain and Spanish America up to 1700 set against a broad background of cultural, socio-political and historical developments. Prereqs: 323 and 330. Writing emphasis course. (Same as Latin American Studies 334.)

345-46 Language and Culture of the Hispanic Business World (3, 3) Commercial vocabulary, business letters, import-export, marketing. Hispanic social management culture, and the global significance of economic and political developments in Spanish-speaking countries. Required of all Spanish majors with a concentration in Business and World Business. Prereq: 323 or permission of department if a student’s level of proficiency in Spanish is both superior and native as per the ACTFL Proficiency Guidelines.

401 Cultural Plurality and Institutional Changes in Latin America (3) Value systems, systems of values, political roles, military, the church, unconstitutional actions, dictatorship, and nationalism. Prereq: 6 hours of Latin American Studies courses or consent of instructor. Writing-emphasis course. (Same as Latin American Studies 401.)

410 Latin American Studies Seminar (3) Selected topics in Latin American Studies. May be repeated. Maximum 6 hours. Prereq: 400-401 level Latin American Studies courses or consent of the instructor. Writing-emphasis course. (Same as Latin American Studies 402.)

411 Phonetics (3) Prereq: 323 or permission of instructor.

421 Advanced Grammar and Translation (3) Structure of the grammatical system of Spanish. In-depth analysis of selected syntactic phenomena with practical illustration/application and exercise in Spanish-English and Spanish-Spanish translation. Emphasis on finer points of grammatical structures. Not available to native or bilingual students of Spanish without permission of department. Prereq: 323. Writing-emphasis course.

423 Advanced Composition and Conversation (3) Develops writing and speaking skills to the advanced level, covering a wide range of topics and situations and including a variety of extra-class activities. Prereq: 212 or 218 or permission of department.

425 Introduction to Descriptive Linguistics (3) (Same as French, German, Russian, and Linguistics 425.)

462 Methods of Historical Linguistics (3) (Same as Russian, French, German, and Linguistics 462.)

429 Romance Linguistics (3) (Same as French 429 and Linguistics 429.)

430 Topics in Hispanic Linguistics (3) Introduction to the study of the Spanish language through different areas of linguistics such as phonology, morphology, syntax, semantics, sociolinguistics, dialectology and second language acquisition. Prereq: 323, 330, 331 and comparison of major or minor requirement in 332, 333, and 334. May be repeated. Maximum 6 hours with permission of department. Writing-emphasis course. (Same as Linguistics 431.)
433 Images of Woman in Hispanic Literature (3) Examines major Hispanic texts (and/or women authors) in the light of the relation of female individuality to a particular social context, the role of women in society, patriarchal tradition, woman as cultural and aesthetic value ("the feminine symbolic"), and feminist theoretical issues. Prereq: 323, 330 and completion of major or minor requirements in 332, 333, and 334. Writing-emphasis course.

434 Hispanic Culture through Film (3) Analysis of selected films on subjects concerning life, culture, and artistic traditions in the Hispanic world; exploration of ideological, philosophical, and political implications of films and a comparison of films with treatments of related subjects in other types of artistic production. Prereq: Spanish 323, 330 and completion of major or minor requirements in 332, 333, and 334. Taught in Spanish. May be repeated. Maximum 6 hours with permission of department. Writing-emphasis course. (Same as Cinema Studies 434.)

461 Special Topics (3) Focus on some aspect of Hispanic literature, culture, linguistics, or foreign language pedagogy. Topics vary. May be repeated with consent of department. Maximum 6 hours.

465 Latin American Film and Culture (3) Explores Latin American and Latino/a films and videos to present as works of art and in light of political, cultural, and social contexts. Taught in English. Not available for Spanish major or Spanish graduate credit. Graduate credit available for Latin American Studies and Cinema Studies. 1 hour lecture, 2 hours screening, and 1 hour discussion. Writing-emphasis course. (Same as Latin American Studies 465 and Cinema studies 465.)

479 Disenchedanted Texts in Hispanic Literature (3) Texts representing trends and periods of renewal in Spain and Latin American countries. Selected topics on traditions in crisis. Content will vary. Prereq: 323, 330 and completion of major or minor requirements in 332, 333, and 334. May be repeated. Maximum 6 hours with permission of department. Writing-emphasis course. (Same as Latin American Studies 479.)

480 Social Forces in Hispanic Literary Expression (3) Analysis of major Hispanic texts that address factors and events that influenced and/or continue to influence the social and cultural evolution of the Hispanic world, including literature itself. Prereq: 323, 330 and completion of major or minor requirements in 332, 333, and 334. May be repeated. Maximum 6 hours with permission of department. Writing-emphasis course.

482 Trends in Hispanic Thought (3) Intellectual/philosophical currents represented in literary texts, movements, or movements from historical periods of Spain and Latin American countries. Prereq: 323, 330 and completion of major or minor requirements in 332, 333, and 334. May be repeated. Maximum 6 hours with permission of department. Writing-emphasis course.

484 Race, Ethnicity, and Nation in Hispanic Literature (3) Close reading and analysis of literary texts that deal with issues of race and ethnicity in the Hispanic world, especially with regard to identity and concepts of nationhood. Among possible course topics: mestizaje; conceptual distinctions between race and ethnicity in Latin America; indigenismo; afro-Latin American literature; interaction of race and empire; relationship between Jews, Christians, and Moors in Spain. Prereq: Spanish 323, 330 and completion of major or minor requirements in 332, 333, and 334. May be repeated. Maximum 6 hours with permission of department. Writing-emphasis course.

486 Literary and Artistic Movements in the Hispanic World (3) Examination of relationships (esthetic, cultural, socio-political, aesthetic, philosophical, etc.) between specific trends in literature and other artistic media, in the light of the historical contexts in which those relationships emerged. Prereq: 323, 330 and completion of major or minor requirements in 332, 333, and 334. May be repeated. Maximum 6 hours with permission of department. Writing-emphasis course.

489 Topics in Hispanic Civilization (3) Analysis of major trends, issues and/or movements in the civilizations of Spain and Spanish America. Political, literary, and cultural perspectives exploring with topics from the Middle Ages to the present day may be explored. Prereq: 323, 330 and completion of major or minor requirements in 332, 333, and 334. May be repeated. Maximum 6 hours with permission of department. Writing-emphasis course.

491 Foreign Study (1-15) Open to students who have completed 18 hours of upper-division credit hour requires 40 semester hours of off-campus supervised work and a weekly one-credit hour seminar. May be repeated. Maximum 6 hours with permission of department. Writing-emphasis course. (Same as Cinema Studies 434.)

494 Spanish Community Service Practicum (1) Supervised community service with organizations that promote awareness of Hispanic culture among the general public. Each

493 Field Experience in Comprehensive Programs (3) On-site teaching experience with moderately and severely handicapped children and youth. Prereq: 402, admission to Teacher Education Program. Coreq: 432. Satisfaction/No Credit granting only.

497 Psychology of the Exceptional Child (3) General characteristics and educational needs of exceptional children. Implications of developmental variations for functioning as adults. Enrollment limited to non-education majors.

SPEECH COMMUNICATION (943)

100 Introduction to Speech Communication (3) Fundamental theories and practices with particular reference to intrapersonal, interpersonal, group, organizational, and public communication.

107 Honors: Introduction to Speech Communication (3) Analysis and exploration of the conceptual theories and practices of speech communication. Admission by consent of the department.

210 Public Speaking (3) Preparation and delivery of informative and persuasive speeches. Topics include research, organization, adapting to an audience, topic selection, reasoning, and evaluating the discourse of others.

220 Interpersonal Communication (3) Process by which thoughts, feelings, and actions affect and are affected by the face-to-face communication situation.

230 Listening (3) Study of the principles and techniques of listening. Focuses on theoretical and practical listening skills.

240 Business and Professional Communication (3) Basic principles of communication within organizations. Topics and activities may include organizational/communication theory, group problem solving, case studies, interviewing, and formal presentations.

250 Advanced Public Speaking (3) Theory and practice of informative and persuasive speaking. Prereq: 210 or 240.

260 Communication and Society (3) Study of communication strategies and public opinion, with emphasis on communication media: posters, film, songs, demonstrations, drama, and public address.

270 Argumentation and Debate (3) Reasoned decision-making with emphasis on analysis, evidence, reasoning, constructing and refuting arguments.

280 Introduction to Oral Interpretation (3) Art of reading aloud; development of interpretive techniques and their application to selected passages of prose, poetry, and drama. Writing-emphasis course.

300 Nonverbal Communication (3) Exploration of nonverbal communication from interpersonal communication perspective and research, image and coding of nonverbal behavior, research strategies, and theoretical approaches.

310 Persuasion (3) Methods which contribute to effective and ineffective persuasion. Topics include credibility, message construction, and receiver variables.

320 Interpersonal Communication Processes (3) Social dimensions of interpersonal communication and relationships. (Same as Sociology 320.)

330 Group Communication (3) Small group decision-making: evidence, argumentation, leadership, roles, and norms as they affect critical thinking in groups.


350 Communication Theory (3) Survey of social science approach to theorizing about communication. Prereq: 100.

390 History of Rhetorical Theory (3) Western rhetorical theory from Plato to the present. Prereq: 100.

397 Honors Seminar (1-15) Required of students enrolled in the honors program; admission with consent of department.

400 Topics in Speech Communication (3) Variable content course affording opportunity to offer subject matter not covered in an existing course. Topics, scope of subject matter, and prerequisites to be determined by department. May be repeated. Maximum 6 hours. Major credit limited to 3 hours.

420 Communication and Conflict (3) Communication as a significant factor in the development, management, and resolution of conflict at the interpersonal, small group, organizational, or societal levels.

SPECIAL EDUCATION (932)

310 Special Education Principles (3) Introduction to the field of special education, including the nature and causes of disabling conditions, family systems, a history of the field, current intervention policies. Prereq: Admission to Teacher Education Program.

320 Special Education Strategies (3) Introduction to basic special education procedures, including formal and informal assessment, planning, development of individual education plans, applied behavioral analysis, appropriate medical procedures, and effective instructional strategies. Prereq: 310, admission to Teacher Education Program.

402 Professional Studies: Special Education and Diverse Learners (2) Characteristics and needs of students with disabilities and diverse learners with emphasis on educational implications. Techniques, strategies and resources for teaching students with special learning, behavioral or medical needs, and the requirements of special education laws. Prereq: Educational Psychology 210, admission to Teacher Education.

419 Psychology and Education of Students with Mild Disabilities (6) Nature and characteristics of persons with mild handicaps and the educational strategies appropriate for these persons. Prereq: 402, admission to Teacher Education Program. Coreq: 420.

420 Field Experience in Modified Programs (3) Practicum in teaching in modified programs: planning, developing, implementing, and evaluating instruction. Prereq: 402, admission to Teacher Education Program. Coreq: 419. Satisfaction/No Credit granting only.

431 Field Experience in Comprehensive Programs (3) On-site teaching experience with moderately and severely handicapped children and youth. Prereq: 402, admission to Teacher Education Program. Coreq: 432. Satisfaction/No Credit granting only.

432 Psychology and Education of Students with Moderate/Severe Disabilities (6) Nature and characteristics of persons with moderate/severe disabilities and the educational strategies appropriate for these persons. Prereq: 402, admission to Teacher Education Program. Coreq: 431.

454 Education of the Gifted and Talented Children (3) Psychometric and behavioral studies of giftedness. Analysis of past and present school practices in reference to curriculum and program implementation. Prereq: Admission to Teacher Education Program.

456 Speech and Language Basis of Learning Disabilities in the Classroom (3) Normal communication development; understanding of speech and language impairments in school-age students; integration of oral/written communication skills into existing curriculum, especially for high incidence special education students.

470 Psychology of the Exceptional Child (3) General characteristics and educational needs of exceptional children. Implications of developmental variations for functioning as adults. Enrollment limited to non-education majors.
425 Interpersonal Health Communication (3) Interpersonal communication in health care settings. Topics include provider-client interactions, social support groups, stigma, disease, and contemporary models explaining the use of health-related information.

430 Family Communication (3) (Same as Child and Family Studies 430.)

440 Organizational Communication (3) Organizational setting and those variables of the communication process that affect the quality of human interaction both within and outside the organization.

445 Internship (1-3) Supervised career-related experiences using Speech Communication theories and techniques in government and for profit or nonprofit organizations, culminating in a written and oral report. Reserved for Junior/Senior level majors with at least a 3.0 GPA, or by special permission of Internship Director. Satisfactory/No Credit grading only. May be repeated; maximum 6 hours.

450 Propaganda (3) Study of political, commercial, and social propaganda in United States, World War I to present. Writing-emphasis course.

466 Rhetoric of the Women’s Rights Movement to 1930 (3) Historical and critical study of public address in the campaign for women’s rights in the United States from the 1830s to the 1920s. (Same as Women’s Studies 466.) Writing-emphasis course.

469 Freedom of Speech (3) Historical and philosophical perspectives on freedom of expression; legal issues in free speech controversies in the U.S. Writing-emphasis course. (Same as American Studies 469 and Legal Studies 469.)

476 Rhetoric of the Contemporary Feminist Movement (3) Historical and critical study of Rhetoric in the campaign for women’s rights in the United States from the 1940s to present. (Same as Women’s Studies 476.) Writing-emphasis course.

491 Foreign Study (1-15) See description of major concentration. Prereq: Junior/Senior standing with at least a 3.0 GPA; consent of supervising faculty member and department prior to registration (see department for proposal deadline). May be repeated to a maximum 15 hours.

492 Off-Campus Study (1-15) See description of major concentration. Prereq: Junior/Senior standing with at least a 3.0 GPA; consent of supervising faculty member and department prior to registration (see department for proposal deadlines). May be repeated to a maximum 15 hours.

493 Independent Study (1-15) See description of major concentration. Selected readings, research in an area of speech communication to be determined by the student in consultation with supervising faculty member and, ordinarily, in an area of study not covered by departmental curriculum. Application forms available in department office. Prereq: Junior/Senior standing with at least a 3.0 GPA; consent of supervising faculty member and department prior to registration (see department for proposal deadlines). May be repeated to a maximum 15 hours.

497-498 Senior Honors Thesis (3,3) Required of students enrolled in the honors program, admission with the consent of the department.

499 Professional in Speech Communication (3) Major theoretical perspectives in Speech Communication, their interrelationships and applications; consideration of the significance and ethical implications of speech communication in modern society. The course will cover two or more areas of the discipline. Prereq: Senior standing and completion of 100, 340, 350, and at least 12 hours of major requirements in speech communication. Writing-emphasis course.

SPORT MANAGEMENT (957)

100 Orientation to Sport Management (1) Overview of the sports industry and Sport Management major. Taken the first semester as pre-major.

250 Foundations of Sport Management (3) An introduction to the scope of the sport enterprise including why business is involved in sport and an overall evaluation of sport management as a profession. Prereq: 100.

290 Practicum 1 (1) (3) Supervised part-time field experience at an approved site for the purpose of clarifying career goals. Requires a minimum of 120 clock hours. Prereq: Progression to Sport Management. Satisfactory/No Credit grading only. May be repeated; maximum 12 hours.

300 Foundations of Sport Management (3) Overview of managerial theories and techniques used in the production of revenue for sport organizations and through sporting events. Emphasis on developing balanced, multifaceted programs that target a variety of constituencies in the sport industry.

390 Sport Management Internship (3-12) Supervised work experience at an approved site offering sport management opportunities. Emphasis on managerial tasks and administration of procedures. Requires a minimum of 480 clock hours. Prereq: Progression to Sport Management, overall 2.5 GPA (transfer work included), completion of all 300-level requirements, and senior standing. Enrollment for two semesters (6 hours each) or one semester (12 hours required). Total 12 hours required. Satisfactory/No Credit grading only. May be repeated. Maximum of 9 hours.

393 Directed Independent Studies (1-3) Independent study in a specialized area of sport management. Prereq: Progression to Sport Management. May be repeated. Maximum of 9 hours.

SPOR T ST U D I E S (959)

231 Mental Training for Sport and Life (3) Focus on the identification, development, and implementation of effective mental training skills for sport and life. Topics include personal growth and excellence, compulsion, confidence, mental training skills, coach-athlete relationships, and the value of failure will be presented as well as discussed in small group format.

290 Human Motor Behavior (3) Theories and principles explaining motor behavior; psychological factors related to and/or affecting motor skill acquisition and performance. Prereq: At least sophomore standing.

291 Sport in American Society (3) For all university undergraduates on the study of sport in American society from a sociological perspective. (Same as Sociology 291.)

321 History of Sport and Physical Activity in Western Culture (3) Study of sport and physical activity ancient Greek period to modern times, illustrating historical role in western culture. Provides background for growth of sport in education, and explores how most modern collegiate divisions, bearing a myriad of titles, developed. Prereq: Progression to major or consent of instructor.

372 Philosophy of Sport (3) Theories of reality and value as they apply to sport with emphasis on ethical issues. Prereq: Progression to major or consent of instructor.

380 Special Topics (1-3) Study in selected disciplinary or professional areas of Physical Education. May be repeated. Prereq: 290.

491 Psychology of Coaching (2) Major topics and theories dealing with social-psychological factors affecting and relating to sport performance, with practical implications and applications to teaching and coaching. Prereq: Progression to major or consent of instructor.

405 Sociology of Sport (3) (Same as Sociology 405.)

493 Directed Independent Studies (1-3) Independent study in a specialized area with physical education. May be repeated. Maximum 9 hours. Prereq: Consent of advisor and progression to the major. Satisfactory/No Credit grading or letter grade.

STATISTICS (962)


207 Honors Introduction to Statistics (3) Intended as an alternative to 201 for higher GPA students. Involves both lecture and labs, prerequisite: Mathematics 125, 141, or 147, 2 50-minute lecture classes, and one 110-minute lab per week.

410 Special Studies in History, Literature and Criticism (3) Content varies. Concentrated study in a given period or area of theatre history, literature or criticism. May be repeated.

411 Theatre History I (3) Antiquity to 1700. Major historical periods and diverse cultural traditions in world theatre history. Prereq: Theatre 300 or consent of Instructor.

412 Theatre History II (3) 1700 to contemporary theatre. Major historical periods and diverse cultural traditions in world theatre history. Prereq: 300 or consent of instructor.

419 Theatre (3-5) Study and performance of foreign works. Content varies. Language skills required. Prerequisites: Theatre 320 and permission of instructor(s). May be repeated for a total of 9 hours.

421 Theatre Projects in International Theatre (3-5) Study and performance of musical theatre material including both dance and vocal work. May be repeated. Maximum 4 hours.

425 Selected Musical Theatre Techniques (2) and Study and practice of musical theatre techniques. Prereq: Consent of teacher. Must be taken in sequence.


446 Costume Patternmaking (3) Draping patterns for period costumes. Includes corsery and the study of historic patterns 1500-1900.

450 Advanced Scenery Technology I (3) Study and practice of theatre woodworking; production participation will be required. Graduate credit available to theatre M.F.A. students only.

451 Advanced Scenery Technology II (3) Study and practice of metalworking and plastics for theatrical productions; production participation will be required. Graduate credit available to theatre M.F.A. students only.

452 Advanced Scenery Technology III (3) Study and practice of stage rigging for theatrical productions; production participation will be required. Graduate credit available to theatre M.F.A. students only.

454 Scenery Painting (1) Introduction to materials, techniques, and principles of the craft. Emphasis on gaining skill and understanding through studio experience. Prereq: Consent of instructor.

456 Rendering (3) Techniques in monochrome and full color illustration of space and form. Some acquaintance with basic mechanical perspective and freehand sketching is assumed.

462 Advanced Lighting Design (3) Advanced lighting design theory and practice. Lab and project intensive. Prereq: Theatre 362 or consent of instructor.

464 Computer Assisted Design for Theatre (3) Advanced techniques in computer assisted design for theatre. Work with CAD. Computer Drawing, Graphics, and/or 3D Modeling software for preparation of theatrical designs. Specific content varies with semester. Admission by consent of instructor only. May be repeated. Maximum 9 hours.

470 Playwriting (3) Advanced instruction in the writing of plays. Prereq: Consent of instructor.

481 Applied Theatre (1-2) Laboratory in applied theatre techniques for departmental productions. Prereq: Consent of instructor. May be repeated. Maximum 6 hours.

491 Foreign Study (1-15)

492 Off-Campus Study (1-15)

493 Independent Study (1-15)

THEORY AND PRACTICE IN TEACHER EDUCATION (978)

203 Field Study in Education (1-3) Problems of persons in active service in the field. Includes methods of teaching, curriculum materials, school-community relationships and school organizations. May be repeated. Maximum 6 hours.

352 Field Experiences in Teaching: Secondary I (1) Field experiences in tasks related to teaching and teacher roles. Prereq: Admission to Teacher Education Program. Satisfactory/No Credit grading only.

353 Field Experience in Teaching: Secondary II (1) Field experiences in tasks related to teaching and to teacher roles. Prereq: 352 and admission to Teacher Education Program. Satisfactory/No Credit grading only.

355 Introduction to Secondary Schools (3) Aspects of teaching in grades 7-12, including curricular program and roles and responsibilities of secondary school teachers and administrators. Prereq: Admission to Teacher Education Program.

492 Directed Independent Study (1-3) Tutorial and specialized area. Prereq: consent of instructor. May be repeated. Maximum 6 hours. Satisfactory/No Credit grading or letter grade.

493 Independent Study (1-3) Topics to be assigned. May be repeated. Maximum 12 hours.

494 Supervised Readings (1-3) Topics to be assigned. May be repeated. Maximum 12 hours.

495 Special Topics (1-3) Topics to be assigned. May be repeated. Maximum 12 hours.

THEATRE (976)

100 Introduction to Theatre (3) Understanding theatre: thought, philosophy, aesthetics, and production practices. Writing-emphasis course.

200 Basic Theatre Production (3) Introduction to techniques for the production of costumes, scenery, and lighting for the theatre. Emphasis on hands-on skills in labs.

220 Acting I (3) Basic Acting Techniques.

221 Acting II (3) Further exploration and development of acting techniques through exercises and beginning scene work. Prereq: 220.

300 Play Analysis (3) Study of plays and methods used in script analysis for the purpose of play production. Prereq: 100 or consent of Instructor.


322 Stage Movement (3) Introduction to movement/kinesiologic awareness techniques and their application to performance. Prereq: 220 or consent of instructor.

326 Advanced Voice and Speech (3) Breath-centered voice production; exploration and control of shaping sound; IPA; text work; geared toward acting for the stage. Prereq: 220 and 221 or consent of instructor.

340 Introduction to Costume Design (3) Development of research and rendering skills.

345 Costume Construction (3) Techniques in the construction of costumes for the theatre. Prereq: 200 or consent of instructor.

355 Introduction to Scenic Design (3) Introduction to art and craft of scenic design.
UNIVERSITY HONORS (983)

See University Honors (page 195) for Honors by Contract.

117-127 Honors Freshman Seminar (1,1) Sequence required of and limited to all freshman honors students. 117 concentrates on computer skills, contemporary issues, and writing; 127 concentrates on critical thinking, contemporary issues, and international study. Satisfactory/No Credit grading only.

337 Honors: Concentration in the Humanities (3) Small group studies of selected topics, issues or problems with a concentration in the humanistic disciplines. Open to all students with a GPA of 3.25 or greater. Topics vary. May be repeated.

338-348 University Scholars Seminar (1,1) Selected topics: enrollment limited to students in The University Honors Program, or with permission of the Director of University Honors. May be repeated. Maximum 6 hours. Letter grade only.

347 Honors: Concentration in the Social Sciences (3) Small group studies of selected topics, issues or problems with a concentration in the social sciences. Open to all students with a GPA of 3.25 or greater. Topics vary. May be repeated.

357 Honors: Concentration in the Natural and Applied Sciences (3) Small group studies of selected topics, issues or problems with a concentration in the natural and applied sciences. Open to all students with a GPA of 3.25 or greater. Topics vary. May be repeated.

458 Senior Honors Seminar (1) Development and presentation of senior honors project. Limited to and required of all graduating students in The University Program. Should be taken one semester prior to the semester of graduation. Satisfactory/No Credit grading only.

491 Honors: Foreign Study (1-15) Open to any undergraduate honors student. Proposals must be approved in advance. See the Director of University Honors for further information.

492 Honors: Off-Campus Study (1-15) Open to any undergraduate honors student. Proposals must be approved in advance. See the Director of University Honors for further information.

493 Honors: Independent Study (1-15) Open to any undergraduate honors student. Must be used by all University Honors Scholars preparing their senior projects. Proposals must be approved in advance. See the Director of University Honors for further information. Letter grade only.

UNIVERSITY STUDIES (984)

101 Lives and Times (3) Study of biography, autobiography, and biographical theory including factors that shape individual lives. Writing intensive. Intended for entering students.

210-220 Special Topics in University Studies (1-9, 1-9) Interdisciplinary approaches to selected topics for lower division students. Small group discussion of varying topics that transcend the boundaries of a single discipline. Writing intensive and team taught. May be repeated maximum 9 hours. Permission of instructor required. Variable credit.

227 Honors: Topics in University Studies (3) Interdisciplinary approach to a significant scholarly or social issue for lower division students. Small group discussion of varying topics that transcend the boundaries of a single discipline. Writing intensive. May be repeated. Maximum 9 hours. Permission of instructor required.

310-320 Special Topics in University Studies (3,3) Interdisciplinary approaches to issues transcending the boundaries of a single discipline. Topics may be initiated by faculty or students through arrangements with the University Studies Program. Taught by faculty from throughout the University (often team-taught). Discussion based and writing intensive. May be repeated. Maximum: 9 hours.

311 AIDS and Society (3) Speakers from across the state speak about scientific, social, medical, emotional and financial aspects of acquired immunodeficiency syndrome. Students are required to participate in some AIDS related community activity and to describe that activity in writing.

317 Honors: Special Topics in University Studies (3) Honors course utilizing an interdisciplinary approach to a significant scholarly or social issue. Topics change every semester. Consult timetable for current offering. Discussion based and writing intensive. May be repeated. Maximum 9 hours. Permission of instructor required.

322 Technology, Society and the Common Good (3) Explores philosophical and religious systems with a commitment to stewardship of the planet and those with an antagonistic or neutral perception of the natural world. Systems are presented in conjunction with cultural and species extinctions caused by or related to their beliefs and values.

410-420 Advanced Topics in University Studies (3,3) Interdisciplinary research approaches to major issues transcending the boundaries of a single discipline. Topics may be initiated by faculty or students through arrangements with the University Studies Program. Taught by faculty from throughout the University (often team-taught). Discussion based and writing intensive. May be repeated. Maximum: 9 hours.

411 Art and Organism (3) Interdisciplinary investigations of the relationship between art and biology. Readings and discussions focus on the idea that, while art is one of the most wholly human cultural endeavors, it is undeniably linked to, if not emergent from, our basic biology.

412 Normandy Scholars Seminar: War and Remembrance (9) Enrollment is limited to honors students selected for the Normandy Scholars Program. Students take course work and travel as a learning community during their time in the program. The course has three coordinated components: (a) Values and Politics, (b) 20th Century French Literature, Culture, and Language, and (c) World War II. The course is team taught by members of various departments, and prepares students for the culminating integrative four weeks of study in France during the Summer Term. Coordinator’s permission required. Writing intensive.

417 Honors: Advanced Topics in University Studies (3) Honors course utilizing an in-depth interdisciplinary research approach to a significant scholarly or social issue. Topics change every semester. Consult timetable for current offering. Discussion based and writing intensive. May be repeated. Maximum 9 hours. Permission of instructor.

491 Foreign Study (1-15)

492 Off-Campus Study (1-15)

493 Independent Study (1-15)

URBAN STUDIES (985)

200 Human-Environment Systems (3) (Same as Interior Design 200.)

250 Introduction to Urban Studies (3) Introductory survey of urban studies. Includes a lecture series with urban scholars discussing urban issues as seen by their disciplines.

260 Introduction to Real Estate (3) (Same as Finance 280.)

321 Urban Politics and Process (3) (Same as Political Science 321.)

323 Behavioral Geography (3) (Same as Geography 323.)

350 Practicum in Urban Studies (3) Introductory seminars, written assignments and hands-on experience in an organization which is working for urban change.

401 The City in the United States (3) (Same as Planning 401.)

402 Survey of Planning (3) (Same as Planning 402.)

441 Urban Geography (3) (Same as Geography 441.)

450 Directed Field Work (3) Participant observation and faculty-directed research. May be combined with 350 in a unified project, subject to faculty approval. Open to Urban Studies Majors only. Prereq: Approval of department. Satisfactory/No Credit grading only.

454 Cities and Urban American History (3) (Same as History 454.)

460 Senior Seminar (3) A capstone seminar taught by an interdisciplinary team of urban studies faculty in a problem solving context. Prereq: 250, 350, and senior standing. Writing-emphasis course.

464 Urban Ecology (3) (Same as Sociology 464.)

493 Independent Study (3-6) May be repeated. Maximum 6 hours.

WILDLIFE AND FISHERIES SCIENCE (993)


323 Human Dimensions of Wildlife and Fisheries (1) Examination of the linkages between people, institutions, and society at large to natural resource management practices. Case studies and application of basic skills of group communication and collaborative problem solving and planning will be emphasized. Overnight field trips required. Coreq: 303, 323, 330, 340, 350, 440, 442.


341 Law Enforcement and Public Relations (3) Fundamentals and general principles of local, state and federal laws and regulations governing natural resources and their management. Principles and practices of interacting with the public. Prereq: English 102 and Speech 210 or 240 or consent of instructor.

350 Wildlife Damage Management (3) Principles and methods for wildlife damage management including biological, regulatory, practical, and social considerations. Weekend field trips (2) required. Prereq: Forestry, Wildlife, and Fisheries 317 or consent of instructor. 2 hours and 1 lab or field.

440 Wildlife Techniques (3) Methods in wildlife damage control, forest, farmland, wetland wildlife habitat management, identification of wildlife field sign, wildlife capturing techniques and management plan preparation. Weekend field trips (2) required. Prereq: Forestry, Wildlife and Fisheries 317 or consent of instructor. 1 hour and 1 lab or field.

442 Fisheries Techniques (3) Active and passive sampling techniques for fish and aquatic organisms; population estimation methods; fish handling and transport; food habits analysis; marking and tagging techniques; age determination and incremental growth analysis; stream assessment; equipment and instrumentation usage and maintenance; safety in sampling methods. Weekend field trip may be required. Prereq: Forestry, Wildlife and Fisheries 317 or consent of instructor. 1 hour and 1 lab or field.

443 Fisheries Science (3) Quantification and management of freshwater fisheries including population estimation, age and growth, biological assessment, and stocking. Prereq: Forestry, Wildlife, and Fisheries 317 or consent of instructor. 2 hours and 1 lab.

444 Ecology and Management of Wild Mammals (3) Biological and ecological characteristics of game mammals and endangered mammals. Current principles and practices of wild mammal management. Prereq: Forestry, Wildlife, and Fisheries 317 or consent of instructor. 2 hours and 1 lab. One weekend field trip required.
445 Ecology and Management of Wild Birds (3) Biological and ecological characteristics of game birds, endangered birds, and bird pests. Current principles and practices of wild bird management. Prereq: Forestry, Wildlife and Fisheries 317 or consent of instructor. 2 hours and 1 lab. One weekend field trip required.

490 Ethics in Wildlife and Fisheries Management (1) Ethical bases for decision-making and application of methodologies in the practice of wildlife and fisheries management. A series of seminars presented by ethicists, wildlife and fisheries scientists and managers, and foresters will be used to acquaint students with a diverse perspective of ethical behavior in the practices of wildlife and fisheries management. Lectures, panel discussions, and case studies. Team taught. Prereq: Senior standing and major in natural resources. Satisfactory/No Credit grading.

493 Independent Study in Wildlife and Fisheries Science (1-15) Special research or individual problem in wildlife and fisheries science. Letter grade or Satisfactory/No Credit grading only.

496 Internship in Wildlife and Fisheries Science (1-6) Supervised experience at departmental-approved employment location arranged by the student. Internship learning objectives must be pre-approved by the advisor/instructor and the field supervisor. Daily log, supervisor evaluations, and final report required. One credit per two weeks of full-time supervised field experience maximum. Up to 3 credits may be used for science elective. Prereq: Junior standing, consent of instructor. May be repeated. Maximum 6 hours.

WOMEN'S STUDIES (994)

210 Images of Women in Literature: Biography and Autobiography (3) Introduction to women's journals, diaries, biographies and autobiographies. Writing-emphasis course.

215 Images of Women in Literature: Fiction, Poetry, Drama (3) Introduction to the study of women through the roles and stereotypes portrayed in a variety of literary genres (fiction, poetry, and drama), including works from diverse historical periods and cultures. Writing-emphasis course.

220 Women in Society (3) Role played by women in various societies during different historical periods, factors which have limited women's participation in society, social scientists' assumptions about women.

230 Marriage and Family: Roles and Relationships (3) (Same as Child and Family Studies 220.)

310 Emergence of the Modern American Woman (3) Role of women in the development of American civilization and values. Major topics include women's legal and political status, the emergence and development of feminism, women and the creative arts, and women's roles in industrial and post-industrial American society. Writing-emphasis course.

320 Women and Religion (3) (Same as Religious Studies 320 and Judaic Studies 320.)

330 Women in Music (3) (Same as Music History 330.)

332 Women in American Literature (3) (Same as English 332.)

340 Women, Politics, and the Law (3) An examination of recent changes in the laws affecting women and a study of the role of women in contemporary American politics. (Same as Legal Studies 340.)

360 Women in Cross-Cultural Perspective (3) A study of the changing role of women in various contemporary cultures: industrial democracies, developing nations, communist countries. A team-taught course with guest lectures and slide presentations.

375 Gender in Society (3) (Same as Sociology 375.)

382 Philosophy of Feminism (3) (Same as Philosophy 382.)

383 Women in the Greek and Roman World (3) (Same as Classics 383.)

400 Topics in Women's Studies (3) Content varies. May be repeated.

410 Sex Role Development: Implications for Education and Counseling (3) (Same as Counselor Education 410.)

422 Women Writers in Britain (3) (Same as English 422.)

425 Women’s Health (3) (Same as Health 425.)

432 Women in European History (3) (Same as History 432.)

433 French and Francophone Women Writers (3) (Same as French 433.)

434 Psychology of Gender (3) (Same as Psychology 434.)

453 Women in American History (3) (Same as History 453.)

465 Women and Mass Media (3) (Same as Journalism 465.)

466 Rhetoric of the Woman’s Rights Movement to 1930 (3) (Same as Speech Communication 466.)

469 Sexuality and Cinema (3) Explores issues surrounding sexuality, gender and cinema from points of view of feminist film criticism. (Same as Cinema Studies 469.)

476 Rhetoric of the Contemporary Feminist Movement (3) (Same as Speech Communication 476.)

483 African-American Women in American Society (3) (Same as African and African-American Studies 483.)

491 Foreign Study (1-15)

492 Off-Campus Study (1-15)

493 Independent Study (1-15) Registration by consent of chair of Women’s Studies.
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