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, Knoxville, 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 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 Chancellor: http://chancellor.tennessee.edu
- Office of the University Registrar: http://registrar.tennessee.edu
- Undergraduate Admissions: http://admissions.utk.edu/undergraduate
- Office of the Bursar: http://web.utk.edu/~bursar
- Office of Financial Aid and Scholarships: http://web.utk.edu/~finaid
- Office of the Dean of Students: http://web.utk.edu/~homepage

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 (V/TTY available) or 974-2440. Requests for accommodation of a disability should be directed to the ADA Coordinator at the UT Knoxville Office of Human Resources, 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.

Academic Calendar for 2005-2006

Fall Semester 2005
- Classes Begin: Wednesday, August 24
- Labor Day (no classes): Monday, September 5
- First Session Ends: Wednesday, October 12
- Fall Break (no classes): Thursday-Friday, October 13-14
- Second Session Begins: Monday, October 17
- Thanksgiving Break: Thursday-Friday, November 24-25
- Classes End: Tuesday, December 6
- Study Period: Wednesday-Thursday, December 7-8
- Final Exams: Friday, Monday-Thursday, December 9, 12-15
- Graduate Hooding Ceremony: Friday, December 16
- Commencement: Saturday, December 17

Spring Semester 2006
- Classes Begin: Wednesday, January 11
- MLK Holiday (no classes): Monday, January 16
- First Session Ends: Wednesday, March 1
- Second Session Begins: Thursday, March 2
- Spring Break: Monday-Friday, March 20-24
- Spring Recess (no classes): Friday, April 14
- Classes End: Friday, April 28
- Study Period: Monday-Tuesday, May 1-2
- Final Exams: Wednesday-Tuesday, May 3-5, 8-9
- Graduate Hooding Ceremony: Thursday, May 11
- Commencement: Friday, May 12

Summer Term 2006
- Mini Session Begins: Wednesday, May 10
- Memorial Holiday: Monday, May 29
- Mini Session Ends: Wednesday, May 31
- Full and First Sessions Begin: Monday, June 5
- Independence Day Holiday (no classes): Tuesday, July 4
- First Session Ends: Friday, July 7
- Second Session Begins: Monday, July 10
- Full and Second Sessions End: Thursday, August 10
- Summer Graduation Date*: Friday, August 18

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

The Academic Calendar is available on the Web site of the Office of the University Registrar:
http://registrar.utk.edu/academic_calendar.shtml
The University of Tennessee

Board of Trustees

Ex-Officio Members

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<tr>
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<th>Name</th>
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<tbody>
<tr>
<td>Governor, State of Tennessee</td>
<td>J. Steven Ennis</td>
</tr>
<tr>
<td>Commissioner of Education</td>
<td>R. Clayton McWhorter</td>
</tr>
<tr>
<td>President, The University of Tennessee</td>
<td>James L. “Bucky” Wolford</td>
</tr>
<tr>
<td>Executive Director, Tennessee Higher Education Commission</td>
<td>Susan Vickerstaff</td>
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From Congressional Districts

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<th>District</th>
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<td>First</td>
<td>D. Lynn Johnson, Kingsport</td>
<td>1999</td>
<td>May 31, 2005</td>
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<tr>
<td>Third</td>
<td>Don C. Stansberry, Jr., Huntsville</td>
<td>2000</td>
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<tr>
<td>Fifth</td>
<td>Andrea J. Loughry, Murfreesboro</td>
<td>2003</td>
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<td>Sixth</td>
<td>Waymon L. Hickman, Columbia</td>
<td>1999</td>
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<tr>
<td>Seventh</td>
<td>Jerry L. Jackson, Dyersburg</td>
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From Shelby County

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<td>Rhynette N. Hurd</td>
<td>2001</td>
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Officers of the Board

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<th>Term Ends</th>
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<tr>
<td>Governor Phil Bredesen, Chairman</td>
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<td>May 31, 2007</td>
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<td>R. Clayton McWhorter, Vice Chairman</td>
<td>1995</td>
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University of Tennessee Administration

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<td>President</td>
<td>John D. Petersen, BS, PhD</td>
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<tr>
<td>Executive Assistant to the President</td>
<td>Lofton Stuart, BS</td>
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<tr>
<td>Executive Vice President and Interim Chief Financial Officer</td>
<td>Jack H. Britt, BS, MS, PhD</td>
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<tr>
<td>Interim Chief Information Officer</td>
<td>Brice Bible, BS, MBA</td>
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<tr>
<td>Public and Governmental Relations</td>
<td>Hank Dye, BS</td>
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<tr>
<td>Interim Vice President of Agriculture</td>
<td>Buddy Mitchell, BS, MS, PhD</td>
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<tr>
<td>Chancellor, Knoxville</td>
<td>Loren W. Crabtree, BA, MA, PhD</td>
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<tr>
<td>Assistant to the President</td>
<td>Sylvia S. Davis, BS, MS, CPA</td>
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<tr>
<td>Administration and Finance</td>
<td>Robert Levy, BA, MA, PhD</td>
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<tr>
<td>Vice President for Academic Affairs</td>
<td>Catherine S. Mizell, BA, JD</td>
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<tr>
<td>General Counsel, and Secretary</td>
<td>Charles M. Peccolo, Jr., BS, MAcc, CPA, CCM</td>
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<tr>
<td>Treasurer</td>
<td>Charles M. Peccolo, Jr., BS, MD</td>
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<tr>
<td>Vice President for Health Affairs and Chancellor</td>
<td>William F. Owen, Jr., BS, MD</td>
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<tr>
<td>Health Science Center</td>
<td>Theotis Robinson, Jr.</td>
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<tr>
<td>Vice President for Equity and Diversity</td>
<td>Philip A. Scheurer, BA, MS</td>
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<td>Operations</td>
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<tr>
<td>Vice Chancellor for Operations</td>
<td>Fred D. Tompkins, BS, PhD</td>
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<tr>
<td>Executive Director of the UT Research Foundation</td>
<td>Jan R. Williams, BS, MBA, PhD</td>
</tr>
<tr>
<td>Dean of Arts and Sciences</td>
<td>Bruce E. Bursten, SB, PhD</td>
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<tr>
<td>College of Arts and Sciences</td>
<td>Jan R. Williams, BS, MBA, PhD</td>
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<tr>
<td>College of Business Administration</td>
<td>Gregory D. Reed, BS, MS</td>
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<tr>
<td>College of Communication and Information</td>
<td>Robert Rider, BS, MAT, PhD</td>
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<tr>
<td>Dean of Education, Health, and Human Sciences</td>
<td>Way Kuo, BS, MS, PhD</td>
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<tr>
<td>Dean, College of Business Administration</td>
<td>Thomas Klindt, BS, MS, PhD</td>
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Knoxville Campus Administration

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<th>Position</th>
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<tbody>
<tr>
<td>Chancellor, Knoxville</td>
<td>Loren W. Crabtree, BA, MA, PhD</td>
</tr>
<tr>
<td>Vice Chancellor for Budget and Finance</td>
<td>Denise Barlow, BS, CPA, MBA</td>
</tr>
<tr>
<td>Vice Chancellor for Development</td>
<td>Linda Davidson, BA, MS, CPA</td>
</tr>
<tr>
<td>(and Associate Vice President for Development)</td>
<td>Anne Mayhew, BA, PhD</td>
</tr>
<tr>
<td>Vice Chancellor for Academic Affairs</td>
<td>W. Timothy Rogers, BA, MA, JD</td>
</tr>
<tr>
<td>(and Dean of Graduate Studies)</td>
<td>Philip A. Scheurer, BA, MS</td>
</tr>
<tr>
<td>Vice Chancellor for Operations</td>
<td>William F. Owen, Jr., BS, MD</td>
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<tr>
<td>(and Vice President for Operations)</td>
<td>Theotis Robinson, Jr.</td>
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<tr>
<td>Vice Chancellor for Research</td>
<td>Philip A. Scheurer, BA, MS</td>
</tr>
<tr>
<td>Research</td>
<td>John Caruthers, BS, MS, PhD</td>
</tr>
<tr>
<td>Chief Operating Officer, UT Space Institute</td>
<td>Cliffon Woods, III, BS, MS, PhD</td>
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Deans

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<tr>
<td>Interim Dean, College of Agricultural Sciences and Natural Resources and the Tennessee Agricultural Experiment Station</td>
<td>Thomas Klindt, BS, MS, PhD</td>
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<tr>
<td>Interim Dean, College of Architecture and Design</td>
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<tr>
<td>Interim Dean, University Outreach and Continuing Education</td>
<td>Robert Rider, BS, MAT, PhD</td>
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<tr>
<td>Dean of Enrollment Services</td>
<td>Richard L. Mayer, BA, MA</td>
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<tr>
<td>Dean of University Libraries</td>
<td>Barbara I. Dewey, BA, MA</td>
</tr>
<tr>
<td>Dean of Graduate Studies</td>
<td>Anne Mayhew, BA, PhD</td>
</tr>
<tr>
<td>(and Vice Chancellor for Academic Affairs)</td>
<td>Maxine Thompson, BA, MS, EdD</td>
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Independent Departments

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<tr>
<td>Professor of Aerospace Studies, Air Force Reserve Officers Training Corps</td>
<td>Colonel Owen Ragland, MS, U.S. Air Force</td>
</tr>
<tr>
<td>Professor of Military Science and Leadership, Army Reserve Officers Training Corps</td>
<td>Lieutenant Colonel Robert S. Walsh, BA, MA, U.S. Army</td>
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### College of Architecture and Design

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### College of Arts and Sciences

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ABBREVIATIONS: BA- Bachelor of Arts  BS- Bachelor of Science
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<td>Materials Science and Engineering</td>
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<tr>
<td>Mechanical, Aerospace, and Biomedical Engineering</td>
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<td>Nuclear Engineering</td>
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### College of Nursing

| • Nursing |     | BS in Nursing |
| † RN Track |     | BS in Nursing |

### College of Social Work

| • Social Work |     | BS in Social Work |
Glossary

Academic Calendar – An official list of dates found at the beginning of the Undergraduate Catalog and on the University Registrar’s Website (http://registrar.tennessee.edu) 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.

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, Knoxville, but who is now performing satisfactory work.

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

Advanced Placement (AP) Credit – Freshmen admitted to UT Knoxville 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.

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. BA is the Bachelor of Arts degree and BS 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.

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

Classification – Level of progress toward a degree based 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, criminal justice is a concentration of the sociology 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.

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

Correspondence – A type of independent study for individuals who want to study out-of-class at their own pace.

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.

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 – Official recognition for completion of a curriculum.

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. Final certification of degree requirements rests with the Office of the University Registrar.

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.

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.

General Education Requirement – See University General Education Requirement.

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.

15
Independent Study – Academic work completed in consultation with a faculty member outside of the regular course offerings.

Interdisciplinary – Course or program of study involving two or more major areas/departments. For example, the minor in Communication and Information is interdisciplinary.

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.

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.

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).

Satisfactory/No Credit Grading (S/NC) – An alternative to the standard grading system (A, B, C, D, F)

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.

University General Education Requirement – One of the requirements for a baccalaureate degree (beginning Fall 2004 for students following the 2004-2005 catalog). It is a pattern of courses which students complete, regardless of their major, to ensure that they have a broad educational experience.

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.
Statement of Purpose: General education provides the foundation for successful academic study, for lifelong learning, and for carrying out the duties of local, national, and global citizenship. By building basic skills in communication, analysis, and computation as well as by broadening students' historical and cultural perspectives, the general education curriculum helps students acquire an understanding of both self and society, and thus contributes to their personal enrichment while enrolled and after graduation.

The University of Tennessee’s general education program has been designed to enable the student to move among colleges within the university or to move to another institution of higher learning. Although it will provide the students with the skills required by college study, those skills are specific neither to UT Knoxville nor to a particular major or career path.

Outcomes: The program is expected to produce the following outcomes for the students.

Building Basic Skills: Because the hallmark of the educated person is the ability to think independently, students must be trained to acquire, evaluate, and use information.

- Students must be able to acquire information by conducting independent research, both in a conventional library setting and through the use of the rapidly developing electronic technologies, including data bases and internet resources.
- Students must then learn to evaluate the reliability, accuracy, and logical soundness of that information. The students will be taught to apply evaluative techniques to statistical and rhetorical presentations in arts, humanities, natural sciences, and social sciences.
- Students must be trained to use the information that they have acquired. They must write clearly, speak convincingly, and solve problems using creative approaches.

Developing Broadened Perspectives: General education should help students develop habits of self-examination in the context of the individual’s relationship to family, community, society, and world. To this end, general education should also help foster a commitment to respecting the diversity of personal and cultural values.

- Students should be able to explain their own values and beliefs, as well as to understand the histories and cultures behind those values. Students should also develop a commitment to lifelong learning so that they may continue to examine the relationships between their personal perspectives and the perspectives that arise from other cultures.
- Students should strengthen their sensitivity to cultural diversity by studying the histories and traditions of other cultures, both within and outside the United States; and by understanding the dynamic nature of a multicultural world through interdisciplinary perspectives or by learning other languages.

These are the General Education requirements: (See Notes)

A. For Building Basic Skills

I. Communicating through Writing (3 courses including English 101 and 102 plus an approved writing-intensive course): Good writing skills enable students to create and share ideas, investigate and describe values, and record discoveries— all skills that are necessary not only for professional success but also for personal fulfillment in a world where communication increasingly takes place through electronic media. Students must be able to identify areas for inquiry, locate relevant information, evaluate its usefulness and quality, and incorporate the information logically and ethically. They must be able to write correctly, and they must be aware that different audiences and purposes call for different rhetorical responses.

To satisfy this requirement, students take the first-year co position sequence and, upon completion of English 101 and 102 or their equivalent (see Note 4), take one other course designated as “writing-intensive” (WC) in the undergraduate catalog. The writing-intensive courses can be within the student’s major or an elective. In order to gain a “WC” designation, courses shall require formal and informal writing assignments that total 5,000 words.

APPROVED COMMUNICATING THROUGH WRITING (WC) COURSES:

| Agricultural and Extension Education | 440 Communication Techniques in Agriculture |
| Architecture                        | 213 History and Theory of Contemporary Architecture |
| Civil Engineering                   | 205 Professional Development I |
| Electrical and Computer Engineering | 400 Senior Design |
| English                            | 254 Themes in Literature |
|                                    | 255 Public Writing |
|                                    | 295 Business and Technical Writing |
|                                    | 355 Rhetoric and Writing |
|                                    | 360 Technical and Professional Writing |
|                                    | 363 Writing Poetry |
|                                    | 364 Writing Fiction |
|                                    | 398 Junior-Senior Honors Seminar |
|                                    | 455 Persuasive Writing |
|                                    | 499 Senior Seminar |
| Forestry                            | 321 Wildland Recreation |
| Forestry, Wildlife and Fisheries    | 312 Principles of Silviculture |
| Hotel, Restaurant, and Tourism     | 390 Professional Development (same as Retail and Consumer Sciences 390) |
| Industrial Engineering             | 350 Junior Seminar |
| Information Sciences               | 450 Writing About Science and Medicine (same as Journalism and Electronic Media 450) |
| Journalism and Electronic Media    | 200 Introduction to News Writing |
|                                    | 201 Writing for Mass Media |
|                                    | 414 Magazine and Feature Writing |
II. Communicating Orally (1 course): The ability to communicate one’s ideas orally is as important as the ability to express them well in writing. Students should be able to speak in an informative and/or convincing manner to other individuals and to groups, both small and large. Being able to express one’s thoughts clearly has always been a critical component of good citizenship. Students should be able to locate relevant information, evaluate its usefulness and quality, and incorporate the information logically and ethically in public address. (See Note 5.) This requirement may be completed by

(1) Completion of Communication Studies 210 or 240 or

(2) Completion of a course with an “OC” designation.

APPROVED COMMUNICATING ORALLY (OC) COURSES:

Aerospace Engineering
410  Professional Development

Animal Science
360  Horse, Dairy, and Meat Animal Evaluation

Biology
157  Honors Experimental Biology

Biomedical Engineering
410  Professional Topics

Biosystems Engineering
401  Biosystems Engineering Design I

Business Ethics
246  Bioethics (same as Religious Studies 246)

Chemistry
406  Senior Seminar

Civil Engineering
205  Professional Development I

Chemical Engineering
410  Professional Development

Computer Engineering
400  Senior Seminar

Environmental and Soil Sciences
301  Professional Development

Environmental Science
244  Professional Responsibility (same as Philosophy 244 and Religious Studies 244)

Government
244  Professional Responsibility (same as Philosophy 244 and Religious Studies 244)

Humanities
244  Professional Responsibility (same as Philosophy 244 and Religious Studies 244)

Law
244  Professional Responsibility (same as Philosophy 244 and Religious Studies 244)

Philosophy
244  Professional Responsibility (same as Philosophy 244 and Religious Studies 244)

Religious Studies
244  Professional Responsibility (same as Philosophy 244 and Religious Studies 244)

Social Work
314  Human Behavior and the Social Environment

Theatre
300  Play Analysis
III. Quantitative Reasoning (2 courses): In today’s world, arguments and claims often rely for support on scientific studies and statistical evidence. Students should possess the mathematical and quantitative skills to evaluate such evidence. Furthermore, students should possess the skills both to recognize the quantitative dimension of problems and to use mathematical reasoning to formulate and solve the problem. Finally, students need strong quantitative skills because they are indispensable in managing everyday-life situations. This requirement may be completed by either of the following:

(1) taking two mathematics or statistics courses from the list below. (Preferably, these courses would be taken in one of the following pairings: Mathematics 113 and 115; Mathematics 123 and 125; Mathematics 141 and 142; Mathematics 147 and 148; Mathematics 151 and 152; Mathematics 125, 141 or 147 and Statistics 201 or 207; Mathematics 115 and 123 or 125 or 202.)

Mathematics
113 Mathematical Reasoning
115 Statistical Reasoning
123 Finite Mathematics
125 Basic Calculus
141–142 Calculus I, II
147–148 Honors: Calculus I, II
151–152 Mathematics for the Life Sciences I, II
202 Probability, Statistics, and Euclidean Geometry

Statistics
201 Introduction to Statistics
207 Honors: Introduction to Statistics

or

(2) taking one mathematics course from the list above and one course designated in the undergraduate catalog as having a quantitative component (QR). The course designated as having a quantitative component may be within the student’s major or an elective.

APPROVED QUANTITATIVE REASONING (QR) COURSES:

Architecture
331 Architectural Structures I

Computer Science
100 Introduction to Computers and Computing
102 Introduction to Computer Science

Interior Design
460 Lighting for Interior Design

Music Technology
290 Sound Recording Techniques

University Honors
187 Quantitative Reasoning Honors Seminar

B. For Developing Broadened Perspectives

I. Natural Sciences (2 courses): As science and technology come to play an increasingly important role in contemporary life, it is essential for all educated persons to have a fundamental understanding of science and its methods. All students should be familiar with one or more scientific disciplines and the role of science in contemporary society. Such familiarity may be gained through acquisition of knowledge of a discipline’s basic vocabulary, chief discoveries, and fundamental principles; exposure to a discipline’s experimental techniques; and the ability to analyze issues with scientific dimensions. This requirement is satisfied by taking two courses from the approved list. At least one of the courses must have a laboratory.

APPROVED NATURAL SCIENCES (NS) COURSES: († Non-Lab courses)

Anthropology
110 Human Origins†

Astronomy
151 A Journey through the Solar System†
152 Stars, Galaxies, and Cosmology†
161 A Journey through the Solar System with Laboratory
162 Stars, Galaxies, and Cosmology with Laboratory

217–218 Honors: Introductory Astronomy

Biology
101–102 Humankind in the Biotic World
111-112 General Botany
130 Biodiversity
140 Organization and Function of the Cell
157 Honors Experimental Biology†

Chemistry
100 Principles of Chemistry
110 Introduction to Organic and Biochemistry
120–130 General Chemistry
128–138 Honors: General Chemistry

Entomology and Plant Pathology
201 Impact of Insects and Plant Diseases on Human Society†

Forestry, Wildlife and Fisheries
250 Conservation†

Geography
131–132 Geography of the Natural Environment

Geology
101 The Dynamic Earth
102 Earth, Life, and Time
103 The Earth’s Environment
107 Honors: The Dynamic Earth
108 Honors: Earth, Life, and Time
201 Biodiversity: Past, Present, and Future†
202 Earth As An Ecosystem: Modern Problems and Solutions†
203 Geology of National Parks†

Microbiology
210 General Microbiology

Nutrition
100 Introductory Nutrition†

Physics
101–102 How Things Work†
135–136 Introduction to Physics for Physical Science and Mathematics Majors
137–138 Honors: Fundamentals of Physics for Physics Majors
161 Elements of Physics for Architects and Interior Design Students†
221–222 Elements of Physics
II. Arts and Humanities (2 courses): To live well in the present, one must have an acquaintance with the past, especially with the cultural achievements that are the distinctive hallmarks of all human societies. An appreciation of art, music, theater, literature, and philosophy will not only enrich the lives of students, but it will also help them understand their own and other’s aspirations, both in a historical and a contemporary context. This requirement is satisfied by taking two courses from the list below.

APPROVED ARTS AND HUMANITIES (AH) COURSES:

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<tr>
<th>Course</th>
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<tbody>
<tr>
<td>231</td>
<td>Fundamentals of Physics: Electricity and Magnetism</td>
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<tr>
<td>232</td>
<td>Fundamentals of Physics: Wave Motion, Optics, and Modern Physics</td>
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African and African-American Studies

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<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>162</td>
<td>Art of Africa, Oceania, and Pre-Columbian America (same as Art History 162)</td>
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<tr>
<td>233</td>
<td>Major Black Writers (same as English 233)</td>
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Architecture

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<tbody>
<tr>
<td>211</td>
<td>History and Theory of Architecture I</td>
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<tr>
<td>212</td>
<td>History and Theory of Architecture II</td>
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Art History

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<tr>
<td>162</td>
<td>Art of Africa, Oceania, and Pre-Columbian America (same as African and African-American Studies 162)</td>
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<tr>
<td>167</td>
<td>Honors: Art of Africa, Oceania, and Pre-Columbian America</td>
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<tr>
<td>172</td>
<td>Western Art I</td>
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<tr>
<td>173</td>
<td>Western Art II</td>
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<td>177</td>
<td>Honors: Western Art I</td>
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<td>178</td>
<td>Honors: Western Art II</td>
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<td>183</td>
<td>Asian Art</td>
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<td>187</td>
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Classics

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<tr>
<td>221</td>
<td>Early Greek Mythology</td>
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<td>222</td>
<td>Classical Greek and Roman Mythology</td>
</tr>
<tr>
<td>232</td>
<td>Archaeology and Art of Ancient Greece and Rome</td>
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<tr>
<td>253</td>
<td>Greek and Roman Literature in English Translation</td>
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English

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<tr>
<td>201</td>
<td>British Literature I: Beowulf through Johnson</td>
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<td>202</td>
<td>British Literature II: Wordsworth to the Present</td>
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<td>207</td>
<td>Honors: British Literature I</td>
</tr>
<tr>
<td>208</td>
<td>Honors: British Literature II</td>
</tr>
<tr>
<td>221</td>
<td>Literature of the Western World I: Ancient, Medieval, and Renaissance</td>
</tr>
<tr>
<td>222</td>
<td>Literature of the Western World II: Enlightenment, Romantic, and Modern</td>
</tr>
<tr>
<td>231</td>
<td>American Literature I: Colonial Era to the Civil War</td>
</tr>
<tr>
<td>232</td>
<td>American Literature II: Civil War to Present</td>
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<tr>
<td>233</td>
<td>Major Black Writers (same as African and African-American Studies 233)</td>
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<tr>
<td>237</td>
<td>Honors American Literature I: Colonial Era to the Civil War</td>
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<td>238</td>
<td>Honors American Literature II: Civil War to Present</td>
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<td>251</td>
<td>Introduction to Poetry</td>
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<td>Introduction to Drama</td>
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Legal Studies

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<tr>
<td>253</td>
<td>Introduction to Fiction</td>
</tr>
<tr>
<td>254</td>
<td>Themes in Literature</td>
</tr>
</tbody>
</table>

Musicology

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>110</td>
<td>Introduction to Music in Western Culture</td>
</tr>
<tr>
<td>115</td>
<td>Music of the United States</td>
</tr>
<tr>
<td>120</td>
<td>History of Rock</td>
</tr>
<tr>
<td>125</td>
<td>Jazz in American Culture</td>
</tr>
<tr>
<td>210</td>
<td>History of Music I</td>
</tr>
<tr>
<td>220</td>
<td>History of Music II</td>
</tr>
<tr>
<td>290</td>
<td>Introduction to World Music</td>
</tr>
</tbody>
</table>

Philosophy

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>110</td>
<td>The Human Condition: Values and Reality</td>
</tr>
<tr>
<td>111</td>
<td>The Human Condition: Knowledge and Reality</td>
</tr>
<tr>
<td>117</td>
<td>Honors Introduction to Philosophy</td>
</tr>
<tr>
<td>118</td>
<td>Honors Introduction to Philosophy</td>
</tr>
<tr>
<td>241</td>
<td>Engineering Ethics</td>
</tr>
<tr>
<td>242</td>
<td>Contemporary Moral Issues</td>
</tr>
<tr>
<td>243</td>
<td>Business Ethics</td>
</tr>
<tr>
<td>244</td>
<td>Professional Responsibility (same as Legal Studies 244 and Religious Studies 244)</td>
</tr>
<tr>
<td>245</td>
<td>Environmental Ethics</td>
</tr>
<tr>
<td>246</td>
<td>Bioethics (same as Religious Studies 246)</td>
</tr>
<tr>
<td>290</td>
<td>Social and Political Philosophy</td>
</tr>
</tbody>
</table>

Religious Studies

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>244</td>
<td>Professional Responsibility (same as Legal Studies 244 and Philosophy 244)</td>
</tr>
<tr>
<td>246</td>
<td>Bioethics (same as Philosophy 246)</td>
</tr>
</tbody>
</table>

Russian

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>221</td>
<td>Rebels, Dreamers, and Fools: The Outcast in 19th-Century Russian Literature</td>
</tr>
<tr>
<td>222</td>
<td>Heaven or Hell: Utopias and Dystopias in 20th-Century Russian Literature</td>
</tr>
</tbody>
</table>

Theatre

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>Introduction to Theatre</td>
</tr>
</tbody>
</table>

University Honors

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>157</td>
<td>Arts and Humanities Honors Seminar</td>
</tr>
<tr>
<td>257</td>
<td>Special Topics in the Arts and Humanities</td>
</tr>
</tbody>
</table>

III. Social Sciences (2 courses): The goal of the social sciences is to help us understand the way that we live, especially the relation between the individual and the group, sometimes from an historical but often from a contemporary perspective. Vital to the continued health and success of our society is an understanding of the complex individual, political, and social dynamics that make up the modern world. Students should not only have knowledge of the principal concerns of the social sciences, but they should also understand the methods by which social scientists collect and evaluate knowledge. This requirement is satisfied by taking two courses from the following list.

APPROVED SOCIAL SCIENCES (SS) COURSES:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>201</td>
<td>Introduction to African-American Studies</td>
</tr>
<tr>
<td>202</td>
<td>Introduction to African-American Studies</td>
</tr>
</tbody>
</table>

Anthropology

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<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>130</td>
<td>Cultural Anthropology</td>
</tr>
</tbody>
</table>
IV. Cultures and Civilizations (2 courses): Knowledge of foreign languages and cultures and their histories have long been required of educated people. Today technologies of travel and communication create global communities, and so increase the importance of this knowledge. While it is not possible to become expert in all cultures and civilizations, a perspective on which to build knowledge over a lifetime can be gained by study of foreign languages and the study of the cultures and histories of their speakers. This perspective improves the ability of students to function effectively in the global community of the twenty-first century by developing an appreciation of linguistic, historical, and cultural diversity. This requirement is satisfied by either of the following:

(1) taking two courses from the following list

or

(2) taking a two-course sequence in a foreign language at the intermediate level.

APPROVED CULTURES AND CIVILIZATIONS (CC) COURSES:

- African and African-American Studies 235–236 Introduction to African Studies
- Anthropology 120 Prehistoric Archaeology
- Asian Studies 101–102 Asian Civilization
- Classics 201 Introduction to Classical Civilization
- Environmental and Soil Sciences 120 Soils and Civilizations
<table>
<thead>
<tr>
<th>Language</th>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hebrew</td>
<td>241–242</td>
<td>Intermediate Modern Hebrew I, II</td>
</tr>
<tr>
<td></td>
<td></td>
<td><em>(same as Asian Studies 241–242)</em></td>
</tr>
<tr>
<td>Italian</td>
<td>211–212</td>
<td>Intermediate Italian</td>
</tr>
<tr>
<td>Japanese</td>
<td>251–252</td>
<td>Intermediate Japanese I, II</td>
</tr>
<tr>
<td></td>
<td></td>
<td><em>(same as Asian Languages 251–252)</em></td>
</tr>
<tr>
<td>Persian</td>
<td>261–262</td>
<td>Intermediate Persian</td>
</tr>
<tr>
<td></td>
<td></td>
<td><em>(same as Asian Studies 261–262)</em></td>
</tr>
<tr>
<td>Portuguese</td>
<td>211–212</td>
<td>Intermediate Portuguese</td>
</tr>
<tr>
<td>Russian</td>
<td>201–202</td>
<td>Intermediate Russian</td>
</tr>
<tr>
<td>Spanish</td>
<td>211–212</td>
<td>Intermediate Spanish</td>
</tr>
<tr>
<td></td>
<td>217–218</td>
<td>Honors: Intermediate Spanish</td>
</tr>
</tbody>
</table>

**NOTES**

1. Some courses on the various General Education course lists may have prerequisites. Students are responsible for meeting all course prerequisites.
2. A student's college/program may require specific General Education courses.
3. General Education courses must be taken for a letter grade (i.e., A-F) rather than Satisfactory/No Credit (unless this is the only way the course is offered).
4. See College of Arts and Sciences Basic Skills Requirement- Communicating through Writing in the Undergraduate Catalog for information on course equivalencies for English 101 and 102.
5. The Office of Disability Services (ODS) is committed to providing equal opportunities for students with disabilities at the University of Tennessee. Appropriate accommodations will be made to enable persons with disabilities to satisfy the General Education requirements. Students with documented disabilities should contact the Office of Disability Services for assistance with appropriate accommodations at (865) 974-6087 or ods@tennessee.edu.
6. Subcommittees of the Undergraduate Council General Education Committee are charged with management of the courses to be included on the General Education course lists for the Basic Skills and Broadened Perspectives areas. The most current list of General Education courses is posted at http://web.utk.edu/~ugcouncl.
The University of Tennessee, Knoxville, is the state’s flagship institution offering comprehensive programs of undergraduate, graduate, and professional education, research, and public service throughout the state.

UT Knoxville holds the Carnegie classification of “doctoral/research university-extensive.” The campus offers more than 300 degree programs to its 27,300 students, who come from every county in Tennessee, every state in the nation, and more than 100 foreign countries.

A faculty of 1,500 provides high-quality educational experiences to students while also performing research and providing public service to the state and nation.

UT Knoxville is a nationally ranked research institution that attracts more than $253 million in research awards 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.

UT Knoxville 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, Knoxville’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 strengthens research ties between the university and the laboratory and improves science programs at the university. As part of the Science Alliance, UT 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 three 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

Blount College, the University of Tennessee’s forerunner, was established in Knoxville in 1794, two years before Tennessee became a state.

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 UT became Tennessee’s land-grant institution, and the Institute for Public Service was founded and brought together several 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 (UT Knoxville, the Health Science Center at 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 Board of Trustees governs the statewide institution.

The University of Tennessee counts among its faculty and alumni a Nobel laureate, six Rhodes scholars, six Pulitzer Prize winners, and eleven NASA astronauts. University of Tennessee alumni number more than 270,000.

**Accreditation**

The University of Tennessee, Knoxville, is accredited by the Commission on Colleges of the Southern Association of Colleges and Schools to award baccalaureate, master’s, and doctoral degrees.

The Commission on Colleges of the Southern Association of Colleges and Schools is the recognized regional accrediting body in the eleven U.S. Southern states (Alabama, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Texas, and Virginia) for institutions of higher education that award associate, baccalaureate, master’s, or doctoral degrees. The Commission on Colleges is charged with carrying out the accreditation process. The address is 1866 Southern Lane, Decatur, Georgia 30033; phone (404) 679-4501.

**ADMINISTRATIVE POLICIES**

**Inclement Weather Policy**

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

The chancellor 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. In addition, the information will be posted on the UT Knoxville homepage at http://www.utk.edu.

If the university is officially closed, certain essential activities such as dining services, facilities services, 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 (V/TTY available) or 974-2440. Requests for accommodation of a disability should be directed to the ADA Coordinator at the UT Knoxville Office of Human Resources, 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 UT 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. C. 812 et seq.) 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 ...
The University

Undergraduate Admission

Admissions decisions for degree-seeking students are based upon several factors, most important of which are the applicant’s grades in high school and college courses and the applicant’s scores on the ACT or SAT exams. Anyone interested in attending the University of Tennessee, Knoxville, as an undergraduate student is encouraged to visit the Web site of the Office of Undergraduate Admissions for information and application forms.

http://admissions.utk.edu/undergraduate

The application for undergraduate admission is available on the web at http://admissions.utk.edu/undergraduate/application.shtml and may be submitted electronically. Copies of the application form are available by request by e-mail – admissions@utk.edu, at the Office of Undergraduate Admissions in Knoxville, or by written request. Official copies are required for all transcripts and test scores, and these should be sent directly from schools or testing agencies to the Office of Undergraduate Admissions. Official test reports that are part of a high school transcript are accepted. For additional information, please contact the following offices:

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

Knoxville – main office
E-mail: admissions@utk.edu
Phone: (865) 974-2184

Memphis – branch office
E-mail: admit2utk@utk.edu
Phone: (901) 448-8289

Nashville – branch office
E-mail: admit3@utk.edu
Phone: (615) 726-2688

Freshman Admission

The University of Tennessee calculates a “Core GPA” based upon high school course work in fourteen areas:

4 units of English
2 units of Algebra
1 unit of Geometry, Trigonometry, Advanced Math, or Calculus
2 units of Natural Science, including at least 1 unit of Biology, Chemistry, or Physics
1 unit of American History
1 unit of European History, World History, or World Geography
2 units of a single foreign language
1 unit of visual or performing arts

Courses in the list above that were taken as Honors or Dual Enrollment are given an additional half quality point, and courses that were taken as Advance Placement or International Baccalaureate are given an additional quality point in the calculation of the Core GPA. The Core GPA is used for determining eligibility for admission, scholarships, and participation in the University Honors Program.

UT Knoxville accepts either the ACT or SAT examination.
Transfer Admission

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

Prior to graduating from UT Knoxville, transfer students must have completed their last 30 semester hours of credit at UT Knoxville and their last 60 semester hours of credit at a four-year college or university.

Articulation Agreements

Articulation agreements are programs setup with nearby two-year colleges and the University of Tennessee, Knoxville. While at the two-year college, students take a restricted curriculum that leads to the associate degree and also prepares students for the corresponding baccalaureate degree at the University of Tennessee, Knoxville. Currently, UT Knoxville has articulation agreements with six Tennessee community colleges. Details on specific majors and requirements are available from the Office of the University Registrar web site (http://registrar.tennessee.edu/) or from the specified community college.

Advanced Placement – International Baccalaureate – Dual Enrollment Credits

Freshmen or transfer students admitted to the University of Tennessee, Knoxville may receive course credit on the basis of performance on Advanced Placement Examinations, International Baccalaureate Examinations, and in Dual Enrollment courses completed at accredited colleges or universities. See the section on “Academic Policies and Procedures” of this catalog for additional information.

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

Initial residency classification is determined by an admissions processor based on the state of residence. Students who would like their residency classification reconsidered may submit an appeal to the residency classifier listed at http://registrar.tennessee.edu/. The application for reclassification with supporting documentation must be filed no later than last day of registration in order to have the reclassification effective for the upcoming 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://registrar.tennessee.edu/.

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, 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 UT Knoxville 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.sreb.org or contact Norma Harrington, Office of Undergraduate Admissions (865) 974-2184.

Re-Entry Student Applicants

A re-entry student is one who has not been enrolled in high school or college for three years or more prior to making application for admission to UT Knoxville. Re-entry applicants must complete and submit the application for undergraduate admission and application fee. If a student has been enrolled at UT Knoxville as a degree-seeking student at any time, that person is considered to be a Readmission Student.

Readmission to the University

A student previously seeking a degree who has withdrawn from the University of Tennessee, Knoxville, who has been absent for a term other than the summer term, or who has been academically dismissed is required to submit an application for readmission. A copy of the readmission application is available from the Office of Undergraduate Admissions or on the web at http://admissions.utk.edu/undergraduate/readmit.shtml. A student who previously attended UT Knoxville as a non-degree student and wants to re-enter as a degree-seeking student must complete the application for undergraduate admission. Students dismissed when they last attended UT Knoxville must be in good academic standing for six months prior to the beginning of the term in which they wish to enroll. Submitting an application for readmission does not guarantee admission, and a readmission applicant may be asked to appear before the Committee on Readmission.

A student who has attended another college or university since attending the University of Tennessee, Knoxville, must have an official transcript sent to the Office of Undergraduate Admissions. For specific deadline dates, students should contact the Office of Undergraduate Admissions or visit http://admissions.utk.edu/undergraduate/prfilingdates.shtml.

Visiting Student Applicants

A visiting student is one who is actively enrolled in a program at another accredited college or university but who desires to enroll temporarily at the University of Tennessee, Knoxville. Applicants are required to complete the application for undergraduate admission, pay the application fee, and submit to the Office of Undergraduate Admissions a letter of good standing or a transcript showing good academic standing from their college or university.
Academically Talented High School Students

Academically talented students attending Tennessee high schools may apply to enroll at UT Knoxville and receive college credit. These students must receive the recommendation and approval of parents/legal guardians and the high school principal or college counselor, have a high school grade point average equivalent to 3.2 or higher on a 4.00 scale, and submit the application for undergraduate admission and application fee.

Senior and Disabled Applicants

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

International Student Applicants

All foreign nationals on non-immigrant visas are classified as international students whether they are applying to the University of Tennessee, Knoxville, 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, Knoxville, 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 UT Knoxville.
   c. An undergraduate student whose first language is not English is exempted from taking the University of Tennessee, Knoxville, 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 UT Knoxville.
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.

UNIVERSITY FEES

For the most current listing of tuition and fees at the University of Tennessee, Knoxville, see:
http://www.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 on the Bursar’s Office Web site 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. Final 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 centralized accounting system of the University of Tennessee, Knoxville. 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 post-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. Failure to receive a statement does not relieve the student of his/her obligation to pay on or before the due date.

University Program and Services Fee

http://www.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, recreational, and service nature for UT Knoxville 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 (minimum of three hours) 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, Knoxville.

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.

Special Course Fee

Academic areas, such as art, biology, chemistry, engineering, music, and physical education, charge fees for certain courses. Refunds on these fees are determined by the department or on the same percentage as maintenance and tuition.

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 Fee

A final registration 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 is published on the Bursar’s Office Web site. The Final Registration Fee is non-refundable.

See the Bursar’s Office Web site for the dates and fees to be assessed during Final Registration.
Late Fee

VolXpress (fee) accounts which have a balance one month prior to the end of a term will be assessed a late fee. The account balance must be paid in order to access registration services, receive a transcript, grades, or a diploma.

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 re-deposited. 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 late 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/fines 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/or 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, facility, transportation, 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 Bursar’s Office Web site 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.

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 Bursar’s Office Web site 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 on the Bursar’s Office Web site 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.

VolCard

The VolCard is issued to a new student after admission at the appropriate university level or anytime during the year to all students. The VolCard is used in nearly all aspects of campus life to obtain services including meals, vending machines, computers, laundry machines, check cashing, sporting events, cultural attractions, residence halls access, library, recreational facilities and equipment, University Bookstore, and much more. Many students have established
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 telecommunication 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

The 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, or on-line at http://www.state.tn.us/tsac.

The Tennessee Education Lottery Scholarship

The award is for Tennessee residents attending a college or university within the State of Tennessee. Recipients must meet minimum academic and state residency requirements as established by the Tennessee State Legislature. Awards amounts vary by category and range from $2,000 to $4,000 per academic year. More information may be obtained by writing to the Student Assistance Corporation, 404 James Robertson Parkway, Suite 1950, Parkway Towers, Nashville, Tennessee 37243, or on-line at http://www.state.tn.us/tsac.


**Student Loans**

**Federal Perkins Loan.** This is a low-interest loan (currently 5 percent) for students with exceptional 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 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 action of the UT 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 Office of Financial Aid and Scholarships before receiving the first disbursement of loan funds. Charges of up to percent will be deducted from the loan disbursements for federal government and bank loan costs. Repayment will begin no earlier than six 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 which is determined each June (check with lending institution for the current interest rate). Charges of up to percent 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 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 a part 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 UT 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.
STUDENT AFFAIRS AND ACADEMIC SERVICES

Adult Student Services Center
http://web.utk.edu/~adultssc/

The Adult Student Services Center assists students 25 years or older, or those who have delayed or interrupted their college education for a significant period of time. The office works individually with students to address their unique re-entry and educational needs. The ASSC collaborates with campus departments to provide admission and readmission counseling, academic advising, peer support programs, orientation programs, career and financial aid information, educational workshops, and other specialized services for adult students.

The Adult Student Services Center is located at 413 Student Services Building. (865) 974-4504; fax: (865) 974-0088; e-mail: adultssc@utk.edu.

The Black Cultural Center
Minority Student Affairs
http://web.utk.edu/~omsa/

Minority Student Affairs and Black Cultural Center are an integral part of the University of Tennessee, Knoxville. Minority Student Affairs provides academic, cultural and social outlets through programs and services as an ongoing part of the university’s retention efforts. The Tutorial, Book Loan 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 success workshops, Black History Month events, Hispanic Heritage Month events, Welcome Week activities and festivals to renown speakers such as Maya Angelou, Dr. Kweisi Mfume, Cornel West, John Singleton, 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 center continues to receive local, regional and national attention that most recently earned the university the honor of hosting the 13th Annual Conference for the Association for Black Culture Centers. The university community is encouraged to visit the facility and take advantage of the opportunities. The Black Cultural Center is truly a place for all students.

Career Services
http://career.utk.edu

The mission of Career Services is to help students identify and pursue career goals by providing quality information and services reflecting attention to individuals’ needs, use of technology, adaptability, and a positive attitude.

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

Included in the services offered are

- several annual career fairs providing opportunity to speak informally with representatives from over hundreds of different organizations about their entry-level jobs, part-time positions and internships.
- a web site including valuable links to hundreds of other career-related Internet resources.
- a part-time employment service for students seeking such positions.
- resources that help students identify and locate internships and summer employment.
- workshops providing instruction in skills and tactics for successful interviewing, resume preparation, business and dining etiquette, and other topics.
- an online resume database that allows students to submit resumes for hundreds of on-campus interviews, view job postings, and participate in a Web resume book.

Students can contact Career Services for more information or to schedule an appointment.

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, Knoxville, 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, Knoxville strongly encourages students to undertake a semester, summer, or academic year of study outside of the United States. Significant time spent abroad increases students’ ability to appreciate other cultures, helps them better understand their own country and its place in the world, and can bolster their resumes. 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. Study 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 UT Knoxville. 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. Throughout the academic year, information sessions are held every weekday at 2:00 p.m. at the PAO.

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 and such work-based experiences as 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 UT Knoxville’s 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. Department of Homeland Security regulations. It produces The Link, an online newsletter for UT Knoxville’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. Student 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. For visiting J-1 and H-1B scholars there are extensive advising, assistance and weekly orientation sessions.

**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. Culture nights, formal discussions on global topics, language tables and cooking classes are regular features on the I-House calendar.

**Contacts.** General inquiries to CIE are cie@utk.edu; (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.utmrdining.com

The University of Tennessee, Knoxville, 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 UT Knoxville 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 University of Tennessee is committed to ensuring equal access to all programs for people with disabilities.

The Office of Disability Services provides appropriate accommodations to all students with documented disabilities. We are here to assist in arranging for accommodations, as well as working with faculty and staff to ensure that needs are met throughout a student’s college career. Students are encouraged to register with the office as early as possible.

Eligibility must be established before services can be provided. No services can be provided until registration occurs and it is confirmed that the documentation meets required standards. Accommodations are not retroactive.

The Office of Disability Services is located at 191 Hoskins Library, Knoxville, Tennessee 37996-4007. Phone (865) 974-6087 V/T. Fax (865) 974-9552. Email 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 two to three hours of individualized assistance per week. Group tutoring is also available.

**Strategies for Academic Success.** The program provides a series of workshops and seminars that focus on the art and science of becoming a master student. Workshop topics include: the master student philosophy, threats to success in college, learning and thinking, memory enhancement, brain functioning, note-taking techniques, study skills, habits and attitudes, learning styles, test-taking techniques and relaxation methods.

**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.

**Pell Grant Supplement.** EAP first and second year participants with high financial aid need are provided with additional financial aid.

The Educational Advancement Program office is located at 201 Aconda Court. (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.
The center serves as a clinical observation and education facility for students majoring in speech 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: (865) 974-5451; fax (865) 974-4639. For Audiology Services: (865) 974-5453; fax: (865) 974-1792.

**Housing**

http://uuhousing.utk.edu

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, Knoxville. OIT provides public-access computer labs, central computing, administrative information systems and network services, as well as information security for UT Knoxville.

Individual computer accounts are provided at no charge for all UT Knoxville 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/accounts.html. 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 UT Knoxville’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. You may also contact the Help Desk online by filling out the Help Desk request form which can be found at http://oit.utk.edu/contact.html. For more information, please visit our Help Desk Web site at http://oit.utk.edu/helpdesk.

**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 Acosta 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 UT Knoxville. 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/ebt/.

**Statistical Consulting Center.** Our mission is to help UT Knoxville students, faculty, and staff enhance the quality of their research by working together to effectively apply analytical methods, especially statistics. We can help you with determining sample sizes, designing surveys and deploying them on web pages, scanning and scoring scan forms, acquiring and managing data, analyzing or mining data or text, visualizing data through interactive or presentation graphics, and interpreting the results. The costs for most of our services are often centrally funded for the first ten hours of assistance each semester. Assistance is available by appointment via the Help Desk at 974-9900, by walk-in at 200 Stokely Management Center and by email at StatHelp@utk.edu. For details, see http://oit.utk.edu/scc/.

**The Innovative Technology Center.** The Innovative Technology Center (http://ctic.utk.edu) provides the leadership, support, resources, and training necessary to help UT Knoxville 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@UT, the university’s Blackboard-powered integrated online academic community. Students can get help with Online@UT/Blackboard by calling the OIT Help Desk at 974-9900.
Parking Services  
http://web.utk.edu/~pspo/

The University of Tennessee, Knoxville, 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, The Hill and parking facilities. 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 on 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 and is available on the Parking Web site and 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. (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 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, couples counseling, 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.

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

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

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 nine but at least three hours, paying the optional health fee). These out-patient services are available continually throughout every term. The health clinic located at 1818 Andy Holt Avenue is open from 8:00 am to 4:30 pm, Monday through Friday. While urgent-care needs may be handled on a walk-in basis, appointments should be made in most instances. The Student 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 has three immunization requirements for students attending state colleges and universities.

- Measles, mumps and rubella—all students born after January 1, 1957, must provide proof of immunization with two doses of measles, mumps, and rubella vaccine.
- Hepatitis—New incoming students must be vaccinated against Hepatitis B or complete a waiver form acknowledging that they have elected not to be vaccinated.
- Meningitis—New incoming students, who live in on-campus housing, must be vaccinated against meningococcal disease or complete a waiver form acknowledging that they have elected not to be vaccinated.

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, and chicken pox.

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. (865) 974-3171; e-mail: osja@utk.edu.

Office of Student Orientation and Leadership Development  
http://web.utk.edu/~orient

The Office of Student Orientation and Leadership Development coordinates orientation services for all entering undergraduate students and their parents or guardians. The office also provides leadership development opportunities to students once enrolled. The mission is accomplished through enhancing and promoting quality programs and services to educate students about academic life and campus involvement. The Center for Leadership Development is coordinated within the Office of Student Orientation and Leadership Development.

Student Orientation

The Orientation Staff is committed to assisting students with their personal and academic transition to the university. The office is responsible for the summer orientation program, specially designed for new students beginning UT in the fall semester. Orientation programs are also offered for students starting UT throughout the year. The Office of Student Orientation and Leadership Development is located in 412 Student Services Building. (865) 974-2435; email: orient@utk.edu
Center For Leadership Development
http://web.utk.edu/~leader

The Center for Leadership Development helps students maximize their potential to get involved outside the classroom by helping students connect to the university. The center offers a variety of programs and services open to any student who wants to enhance his or her leadership skills. By participating in any one of U.T.'s leadership opportunities students can gain valuable skills that are useful in college and to future employers. Students can be become involved in the Ignite Program, Emerging Leaders Class, Leadership Guides and Leadership Conference. Student leaders and student organizations can also take advantage of the Leadership Conference. Student leaders and student organizations can also take advantage of the Leadership Library and request special leadership programs.

The center is located in 315 F of the University Center. (865) 974-2313; email: leader@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; web site: http://web.utk.edu/~uas; e-mail: uas@utk.edu; (865) 974-3564; hours: 7:30 a.m.-4:30 p.m. Monday-Friday.

First Year Studies. First Year Studies 101 is a one credit hour, graded freshman seminar designed for students who want to make the most of their college careers. 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. National Student Exchange (NSE) provides opportunities for undergraduate students to study for up to one calendar year at another NSE member college or university within the United States, territories, and Canada.

Learning Communities. Students in a freshmen learning community 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. The UAS office works specifically with the Volunteer Community.

Veteran’s Education Benefits
http://registrar.utk.edu/veterans_affairs.shtml

Basic military placement credit may be given on the basis of previous honorable active duty to students who are eligible for the Montgomery G.I. Bill Education Benefits. For more information, please contact the Veterans Administration Assistant in 209 Student Services Building, Monday through Friday, or visit our Web site for more information.

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

This notice is published pursuant to Public Chapter 279, Acts of 2003, effective July 1, 2003.

Women’s Center

The Women’s Center provides essential informational and referral services to UT Knoxville 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 or email wcc@utk.edu.

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

The Writing Center offers free, one-to-one assistance to all writers on the University of Tennessee, Knoxville, 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 instructional 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 212 of the Humanities and Social Sciences Building. Hours are Monday, Tuesday, Wednesday 9:00-7:30; Thursday 9:00-6:00; Friday 9:00-3:00. (865) 974-2611. There is also an after hours Writing Center located in the Hodges Library, Room 135G of Reference Services. Call 974-2611 for the specific hours each semester, or e-mail: writingcenter@utk.edu.
Academic Advising at the University of Tennessee, Knoxville

The University of Tennessee recognizes academic advising to be a critical component of the educational experience of its undergraduate students. Faculty, administrators, and professional staff on this campus consider advising both a responsibility and an opportunity for enriching and enhancing each student’s pattern of learning and personal development. Central to the mission of academic advising at the university is teaching students to understand the meaning of higher education, teaching students to understand the purpose of the curriculum, and fostering students’ intellectual and personal development toward academic success and lifelong learning. Through individual, collaborative relationships with academic advisors, students are best able to define and implement sound educational plans that are consistent with their personal values, goals, and career plans.

At the time of application for admission to UT Knoxville, each student is asked to indicate whether he/she has already identified a preferred college. 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. Advising centers and designated offices 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, all students who have earned fewer than 30 hours at UT Knoxville or are on Academic Review are required to meet with an advisor during each main term of the academic year (i.e., during fall and spring). All other students are required to consult with an advisor for a substantial conference during a designated term each year. Students whose ID numbers end in an even digit are required to meet with an advisor during fall semester. Students whose ID numbers end in an odd digit are required to meet with an advisor during spring semester. This policy does not place a limit on advising for students. Students are encouraged to consult with a college or major advisor at any point during a term or academic year.

All students at the University of Tennessee, Knoxville, 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 UT Knoxville campus and are available to admitted students. These are described in this catalog under Student Affairs and Academic Services and detailed information is available on the Student Success Web site.

**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.
- 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.

**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 chancellor. The university reserves the right to cancel, postpone, or combine classes when necessary.

**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, Knoxville, 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.

1. 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).

2. Unacceptable instruction/evaluation procedures (such as deviation from stated policies on grading criteria, incompletes, late paper, examinations, or class attendance).

3. Inability of instructor to deal with course responsibilities.

4. 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. If the departmental 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 stu-
dent, the instructor, and the department head to appear in per-
person if they choose or to supply a written statement (in the stu-
dent’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 holds for 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 stu-
dent, 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 chancel-
lor 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, employees, 
acting, and all other officers who feel that they may have a 
grievance against the university shall have the right of appeal 
through the chancellor or vice-president to the president of 
the university.

An appeal to the chancellor 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 receiv-
ing 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; 
evertheless, it also provides for basic identification of people at 
the University of Tennessee, Knoxville, without the consent 
of the individual. Release of information to third parties 
includes directory information, such as contained in the cam-
pus 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 activi-
ties and sports, and weight and height (for special activities).

Public notice of the categories to be contained in a direc-
tory 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://registrar.tennessee. 
edu/privacy.shtml.

Social Security Number Use

The University of Tennessee, Knoxville requires the 
assignment of a unique student number for internal identifi-
cation of each student’s record. Prior to January 1, 1975, stu-
dents’ Social Security Numbers (SSNs) were used as student 
identification numbers; therefore, Federal law allows the 
continued use of the SSN as the unique student identifier. In 
December 2004, the university began assigning individual 
student identification numbers to newly admitted students; 
new students will no longer use their SSNs to conduct busi-
ness or access their records.

Student identification numbers are used for university 
business only. The university complies with FERPA guide-
lines when releasing student identification numbers.

Students requiring a correction or change to their student 
identification numbers or to their Social Security Numbers 
should contact Student Data Resources at (865) 974-2108.

Other Requirements

Program Assessment and Improvement 
Through Student Evaluation

In order for the university to assess and improve its aca-
demic programs, periodic measurements of student percep-
tions and intellectual growth must be obtained. As a require-
ment for graduation, students may be asked to 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 experi-
ence for future generations of students.

Senior General Education Test

The Tennessee Higher Education Commission (THEC) 
requires that each public institution for higher learning eval-
uate 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 its 
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.

Senior Major Field Assessment Test

THEC also requires that each public institution for higher 
learning evaluate the knowledge and expertise obtained within 
each major area of study. Each year, a subset of all depart-
ments on campus is required to test all graduating seniors 
from those respective areas. The results from these tests 
enable the University of Tennessee to evaluate and, where 
necessary, improve the quality of major fields of study. Students are informed in their senior year if they are required 
to take such a test.
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. In addition to meeting with college specific academic advisors, student athletes are required to meet with academic counselors in the Thorton Athletic Student Life Center to ensure adherence to University, NCAA and SEC academic policies and requirements.

Teacher Licensure

Though faculty members of the College of Education, Health, and Human Sciences take major responsibility for teaching students how to teach (i.e., pedagogy), other faculty throughout the campus teach students what to teach (i.e., subject matter). For example, the faculty in the College of Arts and Sciences has responsibility for providing the broad, general education, background required of all teachers and for providing the specialized content knowledge needed by elementary and secondary teachers.

Information regarding other teaching fields and educational specialties is available through the following campus offices:
- Agriculture Education – 201 Morgan Hall
- Art Education – 1715 Volunteer Boulevard, 213 Art and 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 – Henson Hall

Information regarding general teacher preparation is described in the College of Education, Health, and Human Sciences section of this catalog and is available through the college’s Licensure Services, A313 Claxton Complex.

Opportunities for High-Achieving Students

Advanced Placement Examinations

Freshmen admitted to the University of Tennessee, Knoxville, 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 (CEEB) in 16 subject areas. The tests are usually taken by high school students during their junior or senior year.

Departments at UT Knoxville which grant advanced placement credit for satisfactory test scores include Art, Biology, Chemistry, Computer Science, Earth and Planetary Sciences, 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, Knoxville, in June or July. Each participating department decides the acceptable score for credit. Information may be obtained from the Admissions Office or from Arts and Sciences Advising Services.

International Baccalaureate Examinations

The International Baccalaureate Diploma Program of the International Baccalaureate Organization (IBO) is a rigorous pre-university course of studies that leads to examinations for highly motivated secondary school students.

Students who have participated in the International Baccalaureate Program through their high schools may receive credit based on satisfactory test scores as established by UT Knoxville’s participating departments. The IBO sends scores on request to the Director of Admissions at the University of Tennessee, Knoxville, in June or July. Each participating department decides the acceptable score for credit. Information may be obtained from the Admissions Office or from Arts and Sciences Advising Services.

Proficiency and Other Examinations

With departmental approval, nationally recognized examinations, such as the examinations of the College Level Examinations Program (CLEP) of the College Entrance Examination Board, may be used to earn credit.

Students who want to use proficiency or other examinations to earn credit for work or material mastered through non-credit courses or experiences should contact the dean of the college that offers the course for which credit is sought.

Honors Courses

Courses specifically designated as honors courses are available, but are not exclusive to those students enrolled in the University Honors Program. Students with requisite ACT/SAT scores and previous acceptable academic performance may also be allowed to 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 reading courses may not total more than six credit hours toward graduation.

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.

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. Form available online at: http://gradstudies.tennessee.edu.
• A maximum of nine 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.

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.

<table>
<thead>
<tr>
<th>Classification of Undergraduate Students</th>
<th>by Semester Hours Passed</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Programs except Architecture</td>
<td>Architecture</td>
</tr>
<tr>
<td>Year ...................................Hours</td>
<td>Year .....................Hours</td>
</tr>
<tr>
<td>First ..................................0-29.9</td>
<td>First .....................0-31.9</td>
</tr>
<tr>
<td>Second ..................................30-59.9</td>
<td>Second ....................32-63.9</td>
</tr>
<tr>
<td>Third ..................................60-89.9</td>
<td>Third .....................64-95.9</td>
</tr>
<tr>
<td>Fourth ..................................90-up</td>
<td>Fourth ...................96-127.9</td>
</tr>
<tr>
<td>Fifth ...................................——</td>
<td>Fifth ....................128-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.

<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>
<tr>
<td>600-699</td>
<td>Advanced graduate; open to graduate students; available for undergraduate credit (with approval of instructor) for students holding a degree who are taking additional work as undergraduate non-degree students; when taken for undergraduate credit, the letter U will precede the course credit hours on the grade report.</td>
</tr>
<tr>
<td>800-899</td>
<td>Veterinary Medicine; Law.</td>
</tr>
<tr>
<td>900-999</td>
<td>Law.</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, Knoxville, by a UT Knoxville student if an equivalent correspondence course is available from the UT Knoxville 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, Knoxville. 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.

¹Correspondence 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.

High School Deficiencies

Beginning with fall term 1989, the university adopted new undergraduate admission requirements to include certain specified courses. With the exception of American History, one high-school unit is comparable to one three-hour semester of university work.

• Freshmen must remove any deficiencies within their first 60 hours of university work.

• Transfer students graduating from high school in 1989 or later and having more than 12 hours of transfer work must remove the deficiencies within their first 30 hours at UT Knoxville.

• Transfer students graduating from high school in 1989 or later having 60 or more hours of transferable work will be exempt from university unit entrance requirements.

• Any student graduating from high school before 1989 will be exempt from university unit entrance requirements.

• If the course taken to remove a deficiency fulfills a curriculum requirement, the hours will be counted toward satisfying the requirement. Those hours will not be counted toward total hours for graduation, effectively adding to the total number required for graduation.
For additional information and a list of courses that remove high school deficiencies, see http://registrar.tennessee.edu/records/hs_deficiencies.shtml.

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:

Curricular, Major, Minor and/or Graduation Requirements
- 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).

General Education Requirements
- The student completes the petition with the assistance of his/her advisor and obtains the signatures of the advisor.
- The student takes the signed petition to the student's college advising office.
- The college sends the petition to the General Education Committee designee for consideration.
- If the petition is approved, it is entered into DARS (Degree Audit Report System).

University Students
Many students are undecided about their major when they enter UT Knoxville. 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, Knoxville, 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.

UT Knoxville 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, Knoxville, 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 UT Knoxville 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 UT Knoxville by the number of hours the student has attempted at UT Knoxville, 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 Hours 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 the 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 an 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 under 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.
Maximum Hours for Mini-Term

Undergraduate students may enroll in one course during mini-term. Enrollment that exceeds the maximum must be approved by the dean of the student’s college.

Maximum Hours for Summer

Undergraduate students may enroll for a maximum of six 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 Fall and Spring terms. 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 for full term courses in Fall and Spring.
- From the 11th calendar day until the 42nd calendar day, students may drop courses which will receive the notation of W (Withdrawn) for full term courses in Fall and Spring.
- The W grade is not computed in the grade point average.
- Courses may be dropped on the web (http://cpo.utk.edu).
- 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) for full term courses in Fall and Spring. 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 periods for add, drop, change of grading are sessions within the full term, summer, and mini term are determined based on a percentage of the equivalent deadline within the full term. See Timetable of Classes each term for exact dates on the Circle Park Website at http://cpo.utk.edu. Deadline dates will be moved to the next business day if the deadline falls on a holiday, weekend day or spring recess.
  - 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 catalog section Changes in Registration.
- Requests for withdrawal are routinely approved when the student applies by the deadline listed on the Web (www.cpo.utk.edu).
- 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.

Extracurricular Participation

Students who are enrolled or eligible to enroll at the university may participate in extracurricular activities as permitted by the individual club or organization.

Undergraduate Retention Standards

Academic Review

The University of Tennessee, Knoxville, expects all students who enter to remain in good academic standing. To accomplish this, the university has established retention standards. To graduate from UT Knoxville, 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 will no longer be on academic review when his or her 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, Knoxville, 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 UT Knoxville 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, Knoxville, 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 UT Knoxville 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://registrar.tennessee.edu/) 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 the University of Tennessee, Knoxville, 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, Knoxville, 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, Knoxville, 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, and the University General Education Requirement, as described in the front of this catalog. Curricular 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 UT Knoxville 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, Knoxville.
- 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, Knoxville. Credit for correspondence courses taught by the faculty of the UT 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.
- 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.
- Comply with the Southern Association of Colleges and Schools requirement that students complete 25 percent of the credit hours required for the bachelor’s degree at the University of Tennessee, Knoxville.
- 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 for each term are on the Web. (http://registrar.tennessee.edu/).
- Comply with the Tennessee Higher Education Commission requirements (Senior General Education Test and Senior Major Field Assessment Test).
- 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.

Multiple Concentrations
Multiple concentration listings may appear on a student’s transcript when a minimum of 12 distinct credit hours differentiate one concentration from another.

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, Knoxville, 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 at the time of graduation
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 undergraduate 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.

- Students must have earned at least 60 hours at UT Knoxville in order to qualify for honors categories.
- 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.
College of Agricultural Sciences and Natural Resources

Buddy Mitchell, Interim Vice President for the Institute of Agriculture
Thomas H. Klindt, Interim Dean and Tennessee Agricultural Experiment Station
Mary Lewnes Albrecht, Associate Dean for Academic Programs
Clark J. Brekke, Assistant Dean for Academic Programs
C. Roland Mote, Assistant Dean, Tennessee Agricultural Experiment Station
Robert H. Orr, Coordinator; International Programs in Agriculture and Natural Resources
Emily Gray, Director of CASNR Student Services
Theresa Cooper, Coordinator; Student Recruitment and Retention
Sandella Gansheimer, Coordinator, Student Recruitment and Retention

http://casnr.tennessee.edu/

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 College of Agricultural Sciences and Natural Resources 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 pre-professional concentration (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 with concentrations in landscape design and construction; plant science, biotechnology and horticulture; public horticulture; turfgrass science and management (Department of Plant Sciences)
• wildlife and fisheries science with concentrations in wildlife and fisheries management and wildlife health (Department of Forestry, Wildlife and Fisheries)

The Department of Entomology and Plant Pathology offers undergraduate courses in support of the above majors and an undergraduate minor. It does not offer 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 wildland recreation concentrations are fully accredited by the Society of American Foresters. The food science and technology program maintains the professional 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 foodscience and technology allows students to be awarded a Bachelor of Science 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 University of Tennessee, Knoxville, College of Veterinary Medicine.

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 University of Tennessee, Knoxville, 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 agriculture 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. All courses must be passed. A student cannot graduate with a grade of F in any course in the major/concentration. Students must repeat courses in the major/concentration and earn a passing grade prior to the awarding of the degree.

### 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 College of Agricultural Sciences and Natural Resources 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, Knoxville. 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.

### Satisfactory/No Credit Courses

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 College of Agricultural Sciences and Natural Resources 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; natural resources; and plants, soils and insects are available.
Minimum Requirements for Baccalaureate Degree Programs

All Bachelor of Science degree programs offered in the college have the following minimum requirements.

- Communicating through Writing—three courses to include English Composition (101-102) and one writing-intensive (WC) course from the university-approved list
- Communicating Orally—one course—Communication Studies 210 or 240 or a course with an (OC) designation from the university-approved list
- Quantitative Reasoning—two courses—two-course mathematics sequence or one mathematics course and one course with a (QR) designation from the university-approved list
- Arts and Humanities—two courses from the university-approved list
- Social Sciences—two courses from the university-approved list
- Biological Sciences—two courses, minimum six hours, one course may be a College of Agricultural Sciences and Natural Resources course
- Physical Sciences—two courses, minimum six hours from chemistry, physics, geology, Geography 131-132 (physical geography), Environmental and Soil Sciences 210

Note: At least one of the four biological and physical sciences courses must be a lab course.

- Cultures and Civilizations—two courses from the university-approved list or a two-course sequence in a foreign language at the intermediate level (200-level)
- Computer Technology/Applications—one course—Agriculture and Natural Resources 290 or a course in which computer technology is an integral and necessary component and is approved by the College of Agricultural Sciences and Natural Resources Undergraduate Council as such
- Major courses—minimum of 22 hours in the major to include an orientation course (Agriculture and Natural Resources 100 or an equivalent orientation course in the department or university)

For a total of 120 hours minimum.

Selection of Minor

Students may have a single or multiple minors in any of the University of Tennessee, Knoxville, colleges recorded on their transcripts without regard to course overlap among majors and minors. Minors offered by departments require a minimum of 15 credit hours in courses offered in the program. The majority of credit hours must be at the 300- and 400-level. No departmental or college orientation 100-level course may be used to satisfy the requirements of the minor. At least nine 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 College of Agricultural Sciences and Natural Resources are open to any students of any other colleges, who have the approval of their academic advisor and department. Students working on a minor in the College of Agricultural Sciences and Natural Resources 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)
- entomology and plant pathology (Department of Entomology and Plant Pathology)
- environmental and soil sciences (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 (Department of Plant Sciences)
- wildlife and fisheries science (Department of Forestry, Wildlife and Fisheries)

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 Assistant Dean for Academic Programs about international experiences in agriculture and natural resources.

CASNR 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.
- 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
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.
Students in this concentration are strongly encouraged to obtain an industry internship that will compliment their academic program.

**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 Credit</th>
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<tbody>
<tr>
<td>Agricultural Economics 110</td>
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</tr>
<tr>
<td>Agriculture and Natural Resources 290</td>
<td>3</td>
</tr>
<tr>
<td>Biological Science Electives*</td>
<td>8</td>
</tr>
<tr>
<td>Cultures and Civilizations 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>
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</table>

**Sophomore**

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>Accounting 200</td>
<td>3</td>
</tr>
<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>Arts and Humanities Elective*</td>
<td>3</td>
</tr>
<tr>
<td>Physical Sciences Electives*</td>
<td>8</td>
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<tr>
<td>Environmental and Soil Science 210 or Plant Sciences 335</td>
<td>3-4</td>
</tr>
<tr>
<td>Statistics 201*</td>
<td>3</td>
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</table>

**Junior**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
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<tbody>
<tr>
<td>Agricultural Economics 310, 320, 342, 350, 412</td>
<td>13</td>
</tr>
<tr>
<td>English 295* or 360* or Journalism and Electronic Media 201*</td>
<td>3</td>
</tr>
<tr>
<td>Nondepartmental Agricultural Electives</td>
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<tr>
<td>Psychology 110* or Political Science 102* or Sociology 120*</td>
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<td>Communication Studies 210* or 240*</td>
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<tr>
<td>Statistics 320 or 365</td>
<td>3</td>
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**Senior**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</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>
</tr>
<tr>
<td>Economics 313</td>
<td>3</td>
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<tr>
<td>Arts and Humanities Elective*</td>
<td>3</td>
</tr>
<tr>
<td>Electives</td>
<td>8-9</td>
</tr>
</tbody>
</table>

**Total 122**

*Meets University General Education Requirement.

Choose any course from University General Education list.

A minimum of 9 credit hours must be taken from the following courses: Agricultural Economics 315, 330, 337, 355, 360, 420, 430, 442, 444, 450, 470. A minimum of 3 credit hours can be used from each of the following courses: Agricultural Economics 356, 492 and 493.

**Minor in Agricultural Economics and Business**

**Required Courses**

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

**Total 19**

*Meets University General Education Requirement.

Choose any course from University General Education list.

A minimum of 6 credit hours must be taken from the following list of courses: Agricultural Economics 315, 330, 337, 355, 360, 420, 430, 442, 444, 450, 470. A minimum of 3 credit hours can be used from each of the following courses: Agricultural Economics 356, 492 and 493.

**DIRECTED ELECTIVES LISTS • AGRICULTURAL ECONOMICS AND BUSINESS MAJOR**

**Non-departmental Agricultural Electives**

- Animal Science 280, 381, 390
- Biosystems Engineering Technology 202, 203
- Entomology and Plant Pathology 201, 313, 321
- Food Science and Technology 140, 147
- Forestry, Wildlife and Fisheries 211, 250
- Plant Sciences 110, 235
- Environmental and Soil Sciences 210
AGRICULTURE 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 SCIENCE MAJOR
Requirements for the Bachelor of Science in Agriculture • Agricultural Science Major

<table>
<thead>
<tr>
<th>Freshman</th>
<th>Hours Credit</th>
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<tbody>
<tr>
<td>Agriculture and Natural Resources 100</td>
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<td>Agriculture and Natural Resources 290</td>
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</tr>
<tr>
<td>Animal Science 160</td>
<td>3</td>
</tr>
<tr>
<td>Biology 130*, 140*</td>
<td>3</td>
</tr>
<tr>
<td>English 101*, 102*</td>
<td>6</td>
</tr>
<tr>
<td>Mathematics 113* and Quantitative Reasoning Course*</td>
<td>6</td>
</tr>
<tr>
<td>Plant Sciences 120</td>
<td>2</td>
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<table>
<thead>
<tr>
<th>Sophomore</th>
<th>Hours Credit</th>
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</thead>
<tbody>
<tr>
<td>Agricultural and Extension Education 211</td>
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<tr>
<td>Agricultural Economics 212</td>
<td>3</td>
</tr>
<tr>
<td>Food Science and Technology 140</td>
<td>3</td>
</tr>
<tr>
<td>Chemistry 100*-110* or 120*-130*</td>
<td>8</td>
</tr>
<tr>
<td>Environmental and Soil Sciences 210</td>
<td>4</td>
</tr>
<tr>
<td>Plant Sciences 335</td>
<td>4</td>
</tr>
<tr>
<td>Economics 201*</td>
<td>3</td>
</tr>
<tr>
<td>Communication Studies 210* or 240*</td>
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<table>
<thead>
<tr>
<th>Junior</th>
<th>Hours Credit</th>
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<tbody>
<tr>
<td>Agricultural Economics 342</td>
<td>3</td>
</tr>
<tr>
<td>Entomology and Plant Pathology 313 or 321</td>
<td>3</td>
</tr>
<tr>
<td>1, 2Arts and Humanities Elective*</td>
<td>3</td>
</tr>
<tr>
<td>Plant Sciences 330 or 430</td>
<td>2-3</td>
</tr>
<tr>
<td>3Agricultural Sciences and Natural Resources or Communication Minor</td>
<td>15</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Senior</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>3Agricultural Sciences and Natural Resources or Communication Minor</td>
<td>9</td>
</tr>
<tr>
<td>2Agricultural Sciences and Natural Resources Electives</td>
<td>9</td>
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</tbody>
</table>

1, 2Arts and Humanities Elective* .................................................................3
1, 2Cultures and Civilizations Elective* .....................................................3
1, 2Social Sciences Elective* .........................................................................3
Free Electives ..................................................................................................7-8

Total 124

*Meets University General Education Requirement.

Students should select one of the minors offered by the College of Agricultural Sciences and Natural Resources: Agricultural Economics, Animal Science, Biosystems Engineering Technology, Entomology and Plant Pathology, Environmental and Soil Sciences, Food Science and Technology, Forestry, Plant Sciences, Wildlife and Fisheries Science, 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
http://oee.tennessee.edu/

Professors
Waters, R.G., PhD..........................................................Pennsylvania State

Assistant Professors
Fritz, C.A., PhD ..........................................................Iowa State

Emeriti Faculty
Lessly, R.R., EdD..........................................................Oklahoma State
Todd, J.D., EdD..........................................................Illinois (Champaign)

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, Knoxville, 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

<table>
<thead>
<tr>
<th>Freshman</th>
<th>Hours Credit</th>
</tr>
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<tbody>
<tr>
<td>Agriculture and Natural Resources 100</td>
<td>1</td>
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<tr>
<td>Agriculture and Natural Resources 290</td>
<td>3</td>
</tr>
<tr>
<td>Animal Science 160 or 280</td>
<td>3</td>
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<tr>
<td>Biology 101*-102* or 130*-140*</td>
<td>8</td>
</tr>
<tr>
<td>English 101*, 102*</td>
<td>6</td>
</tr>
<tr>
<td>Mathematics 113* and Quantitative Reasoning course*</td>
<td>6</td>
</tr>
<tr>
<td>Economics 201*</td>
<td>4</td>
</tr>
<tr>
<td>Communication Studies 210*</td>
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</table>

<table>
<thead>
<tr>
<th>Sophomore</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural Economics 212</td>
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<tr>
<td>Agricultural and Extension Education 211</td>
<td>3</td>
</tr>
<tr>
<td>Agricultural and Extension Education 201</td>
<td>3</td>
</tr>
<tr>
<td>Biosystems Engineering Technology 202</td>
<td>3</td>
</tr>
<tr>
<td>Chemistry 100*-110* or 120*-130*</td>
<td>8</td>
</tr>
<tr>
<td>Environmental and Soil Sciences 210</td>
<td>4</td>
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</tbody>
</table>
Food Science and Technology 269 .........................................................2
1,2Arts and Humanities Elective ..........................................................3
Plant Sciences 120 and 335 .................................................................3
1,2Social Sciences Elective* .................................................................5

**Junior**

Agricultural Economics 342 ...............................................................3
Agricultural and Extension Education 345 .........................................3
Educational Psychology 210 ...............................................................3
Cultural Studies in Education 400 .......................................................2
Educational Psychology 401 ...............................................................2
Special Education 402 .....................................................................2
Entomology and Plant Pathology 313 or 321 .......................................3
1,2Arts and Humanities Elective* ........................................................3
Health elective..................................................................................3
Plant Sciences 330 or 430 .................................................................2-3

**Senior**

Agricultural and Extension Education 435 and 436 .........................12
Agricultural and Extension Education 434 .........................................3
Animal Science 381 ........................................................................3
Biosystems Engineering Technology 452 .........................................3
1,2Arts and Humanities Elective* ........................................................3
Free Electives ..................................................................................1-2

Total 124

*Meets University General Education Requirement.
1Choose from the University General Education lists.
2One of the University General Education Electives or Free Electives must be a writing-intensive (WC) course.
3Health elective list is available and should be selected in conference with academic advisor.

**Agricultural Extension Education Concentration**

http://aeo.tennessee.edu/

**Professors**

Waters, R.G., PhD ...............................................................Pennsylvania State
Fritz, C.A., PhD ..............................................................Iowa State

**Emeriti Faculty**

Lessly, R.R., EdD ...........................................................Oklahoma State
Todd, J.D., EdD ........................................................Illinois (Champaign)

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**

<table>
<thead>
<tr>
<th>Freshman Hours Credit</th>
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<tbody>
<tr>
<td>Agricultural and Extension Education 211 ................3</td>
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<tr>
<td>Agriculture and Natural Resources 100 ....................1</td>
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<tr>
<td>Agriculture and Natural Resources 290 ....................3</td>
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<tr>
<td>Animal Science 280 ..............................................3</td>
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<tr>
<td>Biology 101*, 102* or 130*-140* .........................8</td>
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<td>English 101*, 102* ...............................................6</td>
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<td>Mathematics 113* and Quantitative Reasoning course*..6</td>
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<table>
<thead>
<tr>
<th>Sophomore Hours Credit</th>
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<tr>
<td>Agricultural and Extension Education 201 ................1</td>
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<td>Agricultural Economics 212 ....................................3</td>
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<tr>
<td>Animal Science 220 .............................................3</td>
</tr>
<tr>
<td>Chemistry 100*, 110* or 120*-130* ....................8</td>
</tr>
<tr>
<td>Economics 201* ..................................................4</td>
</tr>
<tr>
<td>Psychology 110* ..................................................3</td>
</tr>
<tr>
<td>Environmental and Soil Sciences 210 .....................4</td>
</tr>
<tr>
<td>Plant Sciences 120 ..............................................2</td>
</tr>
<tr>
<td>Communication Studies 210* ................................3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Junior Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural and Extension Education 345 ................3</td>
</tr>
<tr>
<td>Agricultural Economics 342 .....................................3</td>
</tr>
<tr>
<td>Animal Science 330 .............................................3</td>
</tr>
<tr>
<td>Entomology and Plant Pathology 313 (recommended course) or 321 ..........................3</td>
</tr>
<tr>
<td>Environmental and Soil Sciences 344 .....................3</td>
</tr>
<tr>
<td>Food Science and Technology 269 ..........................2</td>
</tr>
<tr>
<td>Forestry, Wildlife and Fisheries 250 ......................3</td>
</tr>
<tr>
<td>1,2Arts and Humanities Elective* ..........................3</td>
</tr>
<tr>
<td>Plant Sciences 335 .............................................3</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Senior Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural Sciences and Natural Resources Electives ....3</td>
</tr>
<tr>
<td>Animal Science 381 .............................................3</td>
</tr>
<tr>
<td>Agricultural and Extension Education 434 ...............3</td>
</tr>
<tr>
<td>Biosystems Engineering Technology 432 .................3</td>
</tr>
<tr>
<td>Biosystems Engineering Technology 442 .................3</td>
</tr>
<tr>
<td>Biosystems Engineering Technology 462 .................3</td>
</tr>
<tr>
<td>Free Electives ...................................................7-8</td>
</tr>
<tr>
<td>1,2Arts and Humanities Elective* ..........................3</td>
</tr>
<tr>
<td>Plant Sciences 330 or 430 ....................................2-3</td>
</tr>
</tbody>
</table>

Total 124

*Meet University General Education Requirement.
1Choose from the University General Education lists.
2One of the University General Education Electives, Agricultural Sciences and Natural Resources Electives or Free Electives must be a writing-intensive (WC) course.
ANIMAL SCIENCE MAJOR

Production/Business Concentration

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

**Freshman**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Animal Science 160</td>
<td>3</td>
</tr>
<tr>
<td>Biology 130* - 140* or 101* - 102*</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 100* - 110* or 120* - 130*</td>
<td>8</td>
</tr>
</tbody>
</table>

**Sophomore**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</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>Environmental and Soil Sciences 210</td>
<td>4</td>
</tr>
<tr>
<td>Communication Studies 210* or 240*</td>
<td>3</td>
</tr>
<tr>
<td>Economics 201*</td>
<td>4</td>
</tr>
<tr>
<td><em>Arts and Humanities Electives</em></td>
<td>6</td>
</tr>
<tr>
<td>*Business Minor or 3 Agricultural Economics and Business Minor</td>
<td>3</td>
</tr>
<tr>
<td>*Social Science Elective</td>
<td>3</td>
</tr>
</tbody>
</table>

**Junior**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</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>3</td>
</tr>
<tr>
<td><em>Arts and Humanities Electives</em></td>
<td>6</td>
</tr>
<tr>
<td>Animal Science 360*</td>
<td>3</td>
</tr>
<tr>
<td>*Business Minor or 3 Agricultural Economics and Business Minor</td>
<td>6</td>
</tr>
</tbody>
</table>

**Senior**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Animal Science 430, 495</td>
<td>4</td>
</tr>
<tr>
<td>Select two courses from: Animal Science 481 or 482;</td>
<td></td>
</tr>
<tr>
<td>Animal Science 483 or 484; Animal Science 485 or 489</td>
<td>6</td>
</tr>
<tr>
<td>*Business Minor or 3 Agricultural Economics and Business Minor</td>
<td>10</td>
</tr>
<tr>
<td>Free Electives</td>
<td>8 - 10</td>
</tr>
</tbody>
</table>

**Total 124**

*Meets University General Education Requirement.

1Courses selected from the University General Education lists; one must be writing-intensive (WC).

2Requirements for the business minor: Accounting 200 (3); Economics 201 (4); Statistics 203 (3); Business Administration 201 (4); Finance 301 (3); Marketing 300 (3); Management 300 (3). Total 23 hours.

3Requirements for an agricultural economics and business minor: Economics 201 (4); Agricultural Economics 212, 342, 350, 412 (12); Agricultural Economics Elective (3).

Total 19 hours. Should the student elect the agricultural economics and business minor, he/she should select another 4 hours of College of Business Administration or Agricultural Economics coursework beyond the required 19 hours for the agricultural economics and business minor.

Science/Technology Concentration

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

**Freshman**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Animal Science 160</td>
<td>3</td>
</tr>
<tr>
<td>Biology 130* - 140* or 101* - 102*</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>

**Sophomore**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</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>Communication Studies 210* or 240*</td>
<td>3</td>
</tr>
<tr>
<td><em>Arts and Humanities Elective</em></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>
<td>3</td>
</tr>
</tbody>
</table>

The curriculum is designed to prepare students for leadership careers in livestock production and related industries. Courses in horse, swine, poultry, sheep, dairy, beef cattle and companion, zoo and lab animal 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.

For a complete list of accepted directed electives appearing in the showcases below see the departmental Undergraduate Advising Guide at http://www.animalscience.utk.edu/undr_guide.htm.
### Pre-Veterinary Medicine Program (3+1)

This program allows students to be awarded a Bachelor of Science 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.
- English Composition 101-102 (3,3) – 6 hours; Humanities and Social Sciences – 18 hours;
- Elements of Physics 221-222 (4,4) – 8 hours; General Chemistry 120-130 (4,4) – 8 hours; Organic Chemistry 350-360 and Laboratory 369 (3,3,2) – 8 hours; Cellular and Comparative Biochemistry 401 (4) – 4 hours; General Biology 130-140 (4,4) – 8 hours; Biology 240-4 hours or Animal Science 340-3 hours; Biology Elective-4 hours.
- The last 30 hours of the three-year pre-veterinary curriculum must have been taken at the University of Tennessee, Knoxville.
- At least 12 hours of upper division (300- and 400-level courses) technical agriculture courses must be taken at the University of Tennessee, Knoxville.
- 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 280–3 hours; Animal Science 380–3 hours; Agriculture and Natural Resources 290–3 hours; Economics 201–4 hours; Communication Studies 210 or 240–3 hours.

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

<table>
<thead>
<tr>
<th>Freshman</th>
<th>Hours Credit</th>
</tr>
</thead>
<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>Hours Credit</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>Communication Studies 210* or 240*</td>
<td>3</td>
</tr>
<tr>
<td>Arts and Humanities 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>Biology 240</td>
<td>4</td>
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</table>

<table>
<thead>
<tr>
<th>Junior</th>
<th>Hours Credit</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>3</td>
</tr>
<tr>
<td>Physics 221*-222*</td>
<td>8</td>
</tr>
<tr>
<td>Arts and Humanities Elective*</td>
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<tr>
<td>Social Science Elective*</td>
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</tr>
<tr>
<td>Free Electives</td>
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<table>
<thead>
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<th>Hours Credit</th>
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<tr>
<td>Animal Science 483 or 484;</td>
<td>6</td>
</tr>
<tr>
<td>Animal Science 485 or 489</td>
<td>6</td>
</tr>
<tr>
<td>Biological Science Restricted Elective</td>
<td>3</td>
</tr>
<tr>
<td>Biochemistry and Cellular and Molecular Biology 401</td>
<td>4</td>
</tr>
<tr>
<td>Arts and Humanities Elective*</td>
<td>3</td>
</tr>
<tr>
<td>Social Science Elective*</td>
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<tr>
<td>Business Elective</td>
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</tr>
<tr>
<td>Free Electives</td>
<td>5-7</td>
</tr>
</tbody>
</table>

Total 124

*Meets University General Education Requirement.

Courses selected from the University General Education lists; one must be writing-intensive (WC).
Junior

Animal Science 320, 330, 340, 380, 395..................................................13
Biochemistry and Cellular and Molecular Biology 401.............................4
\(^1\) Arts and Humanities Elective* ..........................................................6
\(^1\) Economics 201* .................................................................................4
\(^1\) Cultures and Civilizations Elective* ....................................................6
\(^1\) Social Science Elective* .....................................................................3

Total 21

Nine credits from Animal Science 320, 330, 340, 360, 380, 420, 430, and the 480 Series ................................................................. 9

Minor in Animal Science

Required Courses  

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Animal Science 220</td>
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</tr>
<tr>
<td>Animal Science 280</td>
<td>3</td>
</tr>
<tr>
<td>Animal Science 381</td>
<td>3</td>
</tr>
<tr>
<td>Animal Science 480 Series</td>
<td>3</td>
</tr>
</tbody>
</table>

Nine credits from Animal Science 320, 330, 340, 360, 380, 420, 430, and the 480 Series ................................................................. 9

Total 21

*Meets University General Education Requirement.

\(^1\) Courses selected from the University General Education lists; one must be writing-intensive (WC).

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.

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.uky.edu

D. Raj Raman, Interim Head

Professors

Ammons, J.T., PhD ............................................................. West Virginia
Ayers, P.D., PhD, PE .............................................................. North Carolina State
Buschermohle, M.J., PhD ..................................................... Clemson
Essington, M.E., PhD .......................................................... California (Riverside)
Freeland, R.S., PhD, PE ......................................................... Tennessee
Mote, C.R. (Assistant Dean, Tennessee Agricultural Experiment Station), PhD, PE ................................................................. Ohio State
Tomkins, F.D (Vice President for Research, UT Knoxville), PhD, PE ................................................................. Tennessee
Tyler, D.D., PhD ................................................................. Kentucky
Wilkinson, J.B., PhD ............................................................. Purdue
Wills, J.B., MS ........................................................................ Tennessee
Womac, A.R., PhD, PE .......................................................... Tennessee
Yoder, D.C., PhD ................................................................. Purdue

Associate Professors

Eash, N.S., PhD ................................................................. Iowa State
Grandle, G.F., PhD .............................................................. Tennessee
Hart, W.E., PhD ................................................................. Purdue
Hayes, D.G., PhD ................................................................. Michigan
Logan, J., PhD ................................................................. Nebraska
Radosevich, M., PhD .......................................................... Ohio State
Raman, D.R., PhD, PE ........................................................... Cornell
Savoy, H.J., PhD ................................................................. Louisiana State
Walker, F.R., PhD ............................................................. North Carolina State

Assistant Professors

Buchanan, J.R., PhD, PE ........................................................ Tennessee
Lee, J., PhD ................................................................. Iowa State
Leib, B.G., PhD ................................................................. Penn State
Tyner, J.S., PhD ................................................................. Oklahoma State
Ye, X., PhD ................................................................. Minnesota

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 environmental science, 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.

BIOSYSTEMS ENGINEERING MAJOR

Advisors

Ayers, Freeland, Hart, Hayes, Raman, Wilkerson, Womac, 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 educational objectives and program outcomes statements listed below. Program details are given in the showcase curriculum 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 pre-professional concentration 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, (865) 974-7266; e-mail: bees@utk.edu.

The biosystems engineering program at the University of Tennessee, Knoxville, has specific educational objectives that follow directly from the objectives of the University of Tennessee Institute of Agriculture. In order to meet the Institute’s objectives, program graduates will receive the educational tools necessary to perform as entry-level engineering professionals. Recent graduates are to be

- competitive in seeking employment at the regional and national levels.
- aware of meeting their own and societal needs consistent with the goals of life-long learning, professional ethics, and leadership.
- performing as entry-level engineers in a manner that positively reflects on the overall program’s reputation.

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, life-long 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

One of the primary tools engineers bring to the solution of many problems is a mastery of mathematics, so mathematical competence is a critical component of an engineering education. In order to graduate with a major in biosystems engineering, students must display this competence by achieving an average GPA of at least 2.0 in the required mathematics courses. It is the student’s responsibility to work with their academic advisor in assuring that they meet this requirement.

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

<table>
<thead>
<tr>
<th>Freshman</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biosystems Engineering 104</td>
<td>1</td>
</tr>
<tr>
<td>Engineering Fundamentals 105, 151, 152, 202</td>
<td>11</td>
</tr>
<tr>
<td><em>Chemistry 120</em></td>
<td>4</td>
</tr>
<tr>
<td><em>Mathematics 141</em>, 142*</td>
<td>8</td>
</tr>
<tr>
<td><em>English 101</em>, 102*</td>
<td>6</td>
</tr>
<tr>
<td><em>Cultures and Civilizations Elective</em></td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sophomore</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Biosystems Engineering 201, 221, 231, 321</td>
<td>10</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>Mathematics 231, 241</td>
<td>3</td>
</tr>
<tr>
<td>Microbiology 210*</td>
<td>3</td>
</tr>
<tr>
<td>Environmental and Soil Sciences 210</td>
<td>4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Junior</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Biosystems Engineering 411, 416, 431, 451</td>
<td>13</td>
</tr>
<tr>
<td>Statistics 251</td>
<td>3</td>
</tr>
<tr>
<td>Electrical and Computer Engineering 301</td>
<td>3</td>
</tr>
<tr>
<td>Mathematics 200</td>
<td>1</td>
</tr>
<tr>
<td><em>Fluid Science Elective</em></td>
<td>3</td>
</tr>
<tr>
<td><em>Technical Elective</em></td>
<td>3</td>
</tr>
<tr>
<td><em>Arts and Humanities Elective</em></td>
<td>3</td>
</tr>
<tr>
<td>English 360*</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Senior</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Biosystems Engineering 401*, 402, 403, 444</td>
<td>14</td>
</tr>
<tr>
<td><em>Technical Elective</em></td>
<td>3</td>
</tr>
<tr>
<td>Economics 201 (Social Sciences Elective)*</td>
<td>4</td>
</tr>
<tr>
<td><em>Social Sciences Elective</em></td>
<td>3</td>
</tr>
<tr>
<td><em>Arts and Humanities Elective</em></td>
<td>3</td>
</tr>
<tr>
<td><em>Cultures and Civilizations Elective</em></td>
<td>3</td>
</tr>
</tbody>
</table>

Total 128

* Meets University General Education Requirement.
1 Or equivalent honors course.
2 If mathematics placement test does not indicate placement into at least Mathematics 141, discuss mathematics options with advisor.
3 Select from the corresponding University General Education list after consultation with advisor.
4 Select from Civil and Environmental Engineering 390 or Aerospace Engineering 341 after consultation with advisor.
5 Typically, upper-division courses in engineering or related areas. Must be approved in advance by advisor.

Pre-Professional Concentration

The pre-professional concentration provides comprehensive training in biosystems engineering while preparing the student for candidacy to medical school. While this program meets most of the general published pre-med requirements, it is the student’s responsibility to work with an academic advisor to ensure that his or her program meets the demands of specific schools.
Requirements for the Bachelor of Science in Biosystems Engineering • Biosystems Engineering Major • Pre-Professional Concentration

Freshman

Biosystems Engineering 104 .................................................1
Engineering Fundamentals 105, 151, 152, 202 ..................11
\( ^1 \)Chemistry 120*, 130* ..................................8
\( ^1 \)Mathematics 141*, 142* ..........................8
\( ^1 \)English 101*,102* .....................................6

Sophomore

Biosystems Engineering 201, 221, 231, 321 ..................10
Mechanical Engineering 231, 321 .................................6
Nuclear Engineering 203 ...........................................3
Mathematics 231, 241 ...........................................7
Biology 130* ..........................................................4
Chemistry 350 .....................................................3

Junior

Biosystems Engineering 411, 431, 451 ......................10
Statistics 251 ..........................................................3
Electrical and Computer Engineering 301 .................3
Mathematics 200 ....................................................1
\( ^3 \)Fluid Science Elective ....................................3
English 360* ........................................................3
Chemistry 360, 369 ............................................5
\( ^4 \)Arts and Humanities Elective* ......................3

Senior

Biosystems Engineering 401*, 402, 403, 444 ................14
Economics 201 (Social Sciences Elective)* ..................4
\( ^4 \)Social Sciences Elective* ............................3
\( ^4 \)Arts and Humanities Elective* ......................3
\( ^4 \)Cultures and Civilizations Electives* ...............6

Total 128

*Meets University General Education Requirement.
\( ^1 \)Or equivalent honors course.
\( ^2 \)If mathematics placement test does not indicate placement into at least Mathematics 141, discuss mathematics options with advisor.
\( ^3 \)Select from Civil and Environmental Engineering 390 or Aerospace Engineering 341 after consultation with advisor.
\( ^4 \)Select from the corresponding University General Education list after consultation with advisor.

Minor in Biosystems Engineering Technology

Advisors
Ayers, Freeland, Hart, Wilkerson, Womac, 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.

Required Courses

Biosystems Engineering Technology 202 or 212, 326, and 432 ..........9
Select three from 414, 422, 434, 442, 452, 462, 474 .......................9

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 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.

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 • Environmental and Soil Sciences Major • Agricultural Systems Technology Concentration

Freshman

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biology 111* or 112*</td>
<td>8</td>
</tr>
<tr>
<td>Chemistry 120* or 121*</td>
<td>8</td>
</tr>
<tr>
<td>English 101*, 102*</td>
<td>6</td>
</tr>
<tr>
<td>Mathematics 151* or 152*</td>
<td>6</td>
</tr>
<tr>
<td>Social Sciences Elective*</td>
<td>3</td>
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</table>

Sophomore

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural Economics 212</td>
<td>3</td>
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<tr>
<td>Agriculture and Natural Resources 290</td>
<td>3</td>
</tr>
<tr>
<td>Biosystems Engineering Technology 212</td>
<td>3</td>
</tr>
<tr>
<td>Civilizations Elective*</td>
<td>3</td>
</tr>
<tr>
<td>Economics 201*</td>
<td>3</td>
</tr>
<tr>
<td>Environmental and Soil Sciences 210, 334</td>
<td>7</td>
</tr>
<tr>
<td>Communication Studies 210* or 240*</td>
<td>3</td>
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<tr>
<td>Physics 221*</td>
<td>4</td>
</tr>
<tr>
<td>Statistics 201*</td>
<td>3</td>
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</table>

Junior

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural Economics 350 or 355</td>
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<tr>
<td>Arts and Humanities Elective*</td>
<td>3</td>
</tr>
<tr>
<td>Biosystems Engineering Technology 325</td>
<td>3</td>
</tr>
<tr>
<td>Civilizations Elective*</td>
<td>3</td>
</tr>
<tr>
<td>English 360*</td>
<td>3</td>
</tr>
<tr>
<td>Entomology and Plant Pathology 313, 321</td>
<td>6</td>
</tr>
<tr>
<td>Environmental and Soil Sciences 301*</td>
<td>1</td>
</tr>
<tr>
<td>Environmental and Soil Sciences 324</td>
<td>3</td>
</tr>
<tr>
<td>Plant Sciences 457</td>
<td>2</td>
</tr>
<tr>
<td>Technical Elective</td>
<td>3</td>
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</table>

Senior

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts and Humanities Elective*</td>
<td>3</td>
</tr>
<tr>
<td>Biosystems Engineering Technology 414, 423, 434, 462, 474</td>
<td>15</td>
</tr>
<tr>
<td>Environmental and Soil Sciences 481</td>
<td>3</td>
</tr>
<tr>
<td>Industrial Engineering 405</td>
<td>3</td>
</tr>
<tr>
<td>Technical Electives</td>
<td>6</td>
</tr>
</tbody>
</table>

Total 124

*Meets University General Education Requirement.
*Choose from the University General Education lists.

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 • 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 120*</td>
<td>3</td>
</tr>
<tr>
<td>Mathematics 151*, 152*</td>
<td>6</td>
</tr>
</tbody>
</table>

Sophomore

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

Junior

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>English 295* or 360* or Journalism and Electronic Media 200*</td>
<td>3</td>
</tr>
<tr>
<td>Biosystems Engineering Technology 326</td>
<td>3</td>
</tr>
<tr>
<td>Chemistry 350 or 110*</td>
<td>3-4</td>
</tr>
<tr>
<td>Arts and Humanities Elective*</td>
<td>3</td>
</tr>
<tr>
<td>Civilizations Elective</td>
<td>3</td>
</tr>
<tr>
<td>Environmental and Soil Sciences 301, 324, 334, 355</td>
<td>10</td>
</tr>
<tr>
<td>Social Sciences Elective*</td>
<td>3</td>
</tr>
<tr>
<td>Philosophy 245*</td>
<td>3</td>
</tr>
<tr>
<td>Technical Elective</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>2-3</td>
</tr>
<tr>
<td>or Industrial Engineering 405</td>
<td>3</td>
</tr>
<tr>
<td>Biosystems Engineering Technology 212 or 474</td>
<td>3</td>
</tr>
<tr>
<td>Environmental and Soil Sciences 434, 444, 462, 481</td>
<td>12</td>
</tr>
<tr>
<td>Technical Electives</td>
<td>9</td>
</tr>
<tr>
<td>Free Electives</td>
<td></td>
</tr>
</tbody>
</table>

Total 124

*Meets University General Education Requirement.
*Choose from the University General Education lists.

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 soils 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 • Environmental and Soil Sciences Major • Soil Science Concentration

#### Freshman

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

#### Sophomore

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture and Natural Resources 290</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Economics 201*</td>
<td></td>
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</tr>
<tr>
<td>Environmental and Soil Sciences 210</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Geology 101*</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Microbiology 210*</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Physics 221*</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Statistics 201*</td>
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</table>

#### Junior

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biosystems Engineering Technology 212 or 326</td>
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<tr>
<td>Chemistry 110* or 350</td>
<td>3-4</td>
<td>3</td>
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<tr>
<td>Chemistry 310 and 319</td>
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</tr>
<tr>
<td>Environmental and Soil Sciences 301*, 324, 334, 355</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Philosophy 245*</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Plant Sciences 335</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Technical Electives</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>English 295* or 360*, or Journalism and Electronic Media 200*</td>
<td>2-3</td>
<td>3</td>
</tr>
</tbody>
</table>

#### Senior

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural Economics 470 or Economics 462</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Environmental and Soil Sciences 434, 442, 444, 462, 481*</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>Social Sciences Elective*</td>
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</tr>
<tr>
<td>Technical Electives</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>Free Electives</td>
<td></td>
<td>2-3</td>
</tr>
</tbody>
</table>

Total: 124

*Meets University General Education Requirement.
*Choose from the University General Education lists.

### Minor in Environmental and Soil Sciences

#### Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental and Soil Sciences 210, 324, 334</td>
<td>10</td>
<td>10</td>
</tr>
</tbody>
</table>

Electives in Environmental and Soil Sciences and/or Biosystems Engineering Technology at the 300 level or higher: 9

Total: 19

### Technical Electives for Agricultural Systems Technology Concentration

Accounting 201, 202; Agricultural Economics 342, 350, 355; Biosystems Engineering Technology 202, 442, 452; Business Administration 201, 361; Environmental and Soil Sciences 442, 444, 462; Geography 413; Industrial Engineering 304, 423; Plant Sciences 340, 434, 440, 445; Management 411, 471; Operations and Management Science 410

### Department of ENTOMOLOGY AND PLANT PATHOLOGY

http://eppsserver.ag.utk.edu

Carl J. Jones, Head

**Professors**

Bernard, E.C., PhD ........................................ Georgia
Bost, S.C., PhD ........................................ North Carolina State
Burgess, E.E., PhD ........................................ Tennessee
Gerhardt, R.R., PhD ........................................ North Carolina State
Grant, J.F., PhD ............................................ Clemson
Hale, F.A., PhD ........................................... Ohio State
Jones, C.J., PhD ........................................... Wyoming
Lambdin, P.L., PhD ......................................... Virginia Tech
Newman, M.A., PhD ....................................... Texas A&M
Patrick, C.R., PhD ........................................ Mississippi State
Skinner, J.A., PhD .......................................... California (Davis)
Trigiano, R.N., PhD ........................................ North Carolina State
Windham, A.S., PhD ....................................... North Carolina State
Windham, M.T., PhD ....................................... North Carolina State

**Associate Professors**

Canaday, C.H., PhD ........................................ Ohio State
Gwinn, K.D., PhD .......................................... North Carolina State
Lentz, G., PhD ............................................... Iowa State
Owensley, B.H., PhD ..................................... North Carolina State
Stewart, S.D., PhD ......................................... Auburn
Vail, K.M., PhD ........................................... Florida

**Assistant Professors**

Hajimorad, M., PhD ....................................... Adelaide (Australia)
Lamour, K., PhD ........................................... Michigan State
Moulton, J.K., PhD ....................................... Arizona

**Advisor**

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 PhD with a major in plants, soils and insects and 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.
Minor in Entomology and Plant Pathology

Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Choose from Entomology and Plant Pathology 201, 213, 321, 325, 410, 411, 448, 451, 493</td>
<td>16</td>
</tr>
</tbody>
</table>

Total 16

Department of
FOOD SCIENCE AND TECHNOLOGY

http://foodscience.utk.edu

H.C. Goan, Head

Professors
Brekke, C.J. (Assistant Dean), PhD............................................Wisconsin
Davidson, P.M., PhD........................................................................Georgia
Draughon, F.A., PhD...............................................................Washington State
Goan, H.C., PhD.............................................................................Tennessee
Morris, W.C., PhD........................................................................Iowa State

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

Assistant Professors
Harte, F.M., PhD..........................................................................Washington State
Zivanovic, S., PhD..........................................................................Arkansas

Emeriti Faculty
Penfield, M.P., PhD.......................................................................Tennessee

Advisors
Davidson, Draughon, Golden, Loveday, Mount, 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

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 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) should contact the Department of Food Science and Technology in order to check on graduation procedures for this program.

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 (PharmD) program.

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

Freshman

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 English*</td>
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</tr>
<tr>
<td>2 Mathematics 125* or 141* or 151*</td>
<td>3-4</td>
</tr>
<tr>
<td>Biology 130*-140*</td>
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<tr>
<td>Chemistry 120*-130*</td>
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<tr>
<td>Food Science and Technology 140</td>
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</tr>
<tr>
<td>Agriculture and Natural Resources 290</td>
<td>3</td>
</tr>
</tbody>
</table>

Sophomore

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemistry 350, 360-369</td>
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<tr>
<td>Microbiology 210* or higher</td>
<td>3</td>
</tr>
<tr>
<td>3 Physics 221*</td>
<td>4</td>
</tr>
<tr>
<td>4 Social Sciences Electives*</td>
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<tr>
<td>5 Food Science and Technology 340</td>
<td>3</td>
</tr>
<tr>
<td>6 Directed Science Requirements</td>
<td>12</td>
</tr>
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</table>

Junior

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food Science and Technology 301 or University Honors 117</td>
<td>1</td>
</tr>
<tr>
<td>Food Science and Technology 410, and 420-429</td>
<td>9</td>
</tr>
<tr>
<td>5 Directed Science Requirements</td>
<td>9</td>
</tr>
<tr>
<td>6 Arts and Humanities Electives*</td>
<td>6</td>
</tr>
<tr>
<td>7 Statistics 201* or Quantitative Reasoning Elective*</td>
<td>3</td>
</tr>
<tr>
<td>8 Cultures and Civilizations Electives*</td>
<td>6</td>
</tr>
</tbody>
</table>

This curriculum meets the requirements for entrance to the College of Veterinary Medicine or UT medical, dental or pharmacy schools. After the first successful year in the professional school, the student will be awarded a Bachelor of Science in Agriculture with a major in food science and technology. Should the student not gain admittance after the junior year, the student could complete the following requirements during the senior year for a major in food science and technology with a pre-professional concentration.
Senior
Food Science and Technology 401 or University Honors 458 .......................... 1
6 Food Science and Technology Electives ..................................................... 9
Nutrition 100* or 300 ............................................................................. 3
Communicating Orally Elective ................................................................. 1-3
Electives ................................................................................................. 6-9

Total 124

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

**Freshman**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 English*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 Mathematics 125*, 141* or 151*</td>
<td></td>
<td>3-4</td>
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<tr>
<td>3 Biological Sciences</td>
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<tr>
<td>Chemistry 120* or 130*</td>
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<tr>
<td>Food Science and Technology 140</td>
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</tr>
<tr>
<td>Agriculture and Natural Resources 290*</td>
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</tr>
<tr>
<td>4 Arts and Humanities Elective* ..................................................</td>
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**Sophomore**

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<tr>
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<tbody>
<tr>
<td>Chemistry 350, 360-369</td>
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<td>4 Arts and Humanities Elective* ..................................................</td>
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<tr>
<td>Food Science and Technology 340</td>
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<tr>
<td>Nutrition 100* or 300</td>
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**Junior**

<table>
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<tr>
<th>Course</th>
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<tr>
<td>Food Science and Technology 301 or University Honors 117 ..............</td>
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<td>Food Science and Technology 410 and 430</td>
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<tr>
<td>Biochemistry and Cellular and Molecular Biology 310 or 401 ............</td>
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<td>Biosystems Engineering Technology 422</td>
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<tr>
<td>Statistics 201* or Quantitative Reasoning Elective*</td>
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<tr>
<td>4 Cultures and Civilizations Electives*</td>
<td></td>
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<tr>
<td>Communicating Orally Elective* ..................................................</td>
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<td>Electives</td>
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**Senior**

<table>
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<tr>
<th>Course</th>
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<tbody>
<tr>
<td>Food Science and Technology 401 ..................................................</td>
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<tr>
<td>Food Science and Technology 420-429 ..........................................</td>
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<tr>
<td>Food Science and Technology 445, 460, 490 and 495</td>
<td></td>
<td>13</td>
</tr>
<tr>
<td>Nutrition 420</td>
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<td>Food Science and Technology 493</td>
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<td>5-7</td>
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</tbody>
</table>

Total 124

*Meets University General Education Requirement.

**Technology/Business Concentration**

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</th>
<th>Credit</th>
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<tbody>
<tr>
<td>English*</td>
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</tr>
<tr>
<td>Mathematics 110* or 123* or 125* or higher</td>
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<tr>
<td>Biological Sciences</td>
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<td>4</td>
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<tr>
<td>Chemistry 100* or 120*</td>
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<td>6</td>
</tr>
<tr>
<td>Arts and Humanities Electives* ..................................................</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>Food Science and Technology 140</td>
<td></td>
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</tr>
<tr>
<td>Agriculture and Natural Resources 290*</td>
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**Sophomore**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Chemistry 110*</td>
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<td>Microbiology 210* or higher</td>
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<td>Social Sciences Electives*</td>
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<tr>
<td>Directed Technology/Business electives</td>
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<td>Nutrition 100* or 300 or Animal Science 381</td>
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**Junior**

<table>
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<tr>
<th>Course</th>
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<tbody>
<tr>
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<tr>
<td>Cultures and Civilizations Electives*</td>
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<tr>
<td>Directed Technology/Business electives</td>
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<tr>
<td>Statistics 201* or Mathematics 115*</td>
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<tr>
<td>Electives</td>
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**Senior**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Credit</th>
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</thead>
<tbody>
<tr>
<td>Food Science and Technology 401 ..................................................</td>
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</tr>
<tr>
<td>Food Science and Technology 420-429 ..........................................</td>
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<td>5</td>
</tr>
<tr>
<td>Food Science and Technology 445, 460, 490 and 495</td>
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<td>Directed Technology/Business electives</td>
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<tr>
<td>Food Science and Technology 493</td>
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</tbody>
</table>

Total 124

*Meets University General Education Requirement.

**Technology and Business Electives**

Current information and procedures can be obtained at http://foodscience.utk.edu/academics/undergraduate/curriculum.html.
Minor in Food Science and Technology

<table>
<thead>
<tr>
<th>Hour Required Courses</th>
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<td>Food Science and Technology 340</td>
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<td><strong>Total</strong></td>
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Department of
FORESTRY, WILDLIFE AND FISHERIES

http://fwf.ag.utk.edu/

George M. Hopper, Head

Professors
Buehler, D.A., PhD ........................................... Virginia Tech
Dearden, B.L., PhD ........................................... Colorado State
Fly, J.M., PhD .................................................. Michigan
Hodges, D.G., PhD ............................................. Georgia
Hopper, G.M., PhD ............................................ Virginia Tech
Houston, A.T., PhD ........................................... Tennessee
Ostermeier, DM, PhD .......................................... Syracuse
Rials, T.G., PhD ............................................... Virginia Tech
Scharbaum, S.E., PhD ......................................... Colorado State
Speer, C.A., PhD ............................................... Utah State
Strange, R.J., PhD ........................................... Oregon State
Wilson, J.L., PhD ............................................. Tennessee

Associate Professors
Buckley, D.S., PhD ............................................. Michigan Tech
Clatterbuck, W.W., PhD ...................................... Mississippi State
Harper, D.P., PhD .................................................. Washington State
Muller, L.J., PhD .................................................. Georgia
Taylor, M.M., PhD ............................................. Oregon State
Wang, S., PhD .................................................... Nanjing Forestry (China)

Assistant Professors
Eda, S., PhD ...................................................... Japan
Franklin, J.A., PhD .............................................. Alberta (Canada)
Gray, M.J., PhD ................................................... Texas Tech
Harper, D.P., PhD .................................................. Washington State
Muller, L.J., PhD .................................................. Georgia
Taylor, M.M., PhD ............................................. Oregon State
Wang, S., PhD .................................................... Nanjing Forestry (China)

Instructors
Minser, W.G., MS .................................................. Tennessee
Moschler, W., MS .................................................. Virginia Tech

Adjunct Faculty
Albright, R., PhD ................................................ Southern Illinois
Clark, J.D., PhD .................................................. Arkansas
Franzreb, K., PhD ................................................ Arizona State
Peine, J., PhD ..................................................... Arizona
Reams, G.A., PhD ................................................ Maine
Van Manen, F., PhD ............................................. Tennessee

Emeriti Faculty
Buckner, E.R., PhD ............................................. North Carolina State
Dimmick, R.W., PhD .............................................. Wyoming
Hay, R.L., PhD ................................................... Duke
Hill, S.R., T.K., PhD .......................................... Auburn
Pelton, M.R., PhD ................................................ Georgia
Rennie, J.C., PhD ........................................ North Carolina State
Schneider, G., PhD ............................................. Michigan State
Stumbo, D.A., PhD ............................................... Minnesota

Forestry Advisors
Buckley, Fly, Franklin, Hay, Hodges, Ostermeier, Scharbaum

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

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. The wildlife and fisheries science major has two concentrations: wildlife and fisheries management and wildlife health.

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 be 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); calculus (Mathematics 125 or equivalent); general chemistry (Chemistry 100 or equivalent); two courses in general botany (Biology 111 and 112 or equivalent); general economics (Economics 201 or equivalent); public speaking (Communication Studies 210 or 240 or equivalent) and statistics (Statistics 201 or equivalent); microcomputer applications (Agriculture and Natural Resources 290 or equivalent); general ecology (Biology 250 or equivalent)

Wildlife and Fisheries Science

Two courses in English composition (English 101 and 102 or equivalent); calculus (Mathematics 125 or equivalent); two courses in general botany (Biology 111/130 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 (Communication Studies 210 or 240 or equivalent); statistics (Statistics 201 or equivalent); microcomputer applications (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 wide 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 Resources Management Concentration

<table>
<thead>
<tr>
<th>Freshman</th>
<th>Hours</th>
<th>Credit</th>
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<tbody>
<tr>
<td>English 101*-102*</td>
<td>6</td>
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<tr>
<td>Mathematics 125*</td>
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<td></td>
</tr>
<tr>
<td>Biology 111*-112*</td>
<td>8</td>
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<tr>
<td>Forestry 100</td>
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<td>Chemistry 100*</td>
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<td>1 Social Science Elective*</td>
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</tr>
<tr>
<td>2 Electives</td>
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<td></td>
</tr>
</tbody>
</table>

| Sophomore | | |
|-----------|-----------------|
| Economics 201* | 4 |  |
| Statistics 201* | 3 |  |
| Agriculture and Natural Resources 290 or Biosystems Engineering Technology 326 or Geography 411 | 3 |  |
| Forestry, Wildlife and Fisheries 212 | 3 |  |
| Forestry 214, 215 | 6 |  |
| Communication Studies 210* or 240* | 3 |  |
| Environmental and Soil Sciences 210 | 4 |  |
| 1 Cultures and Civilizations Elective* | 3 |  |

| Junior | | |
|--------|-----------------|
| Forestry, Wildlife and Fisheries 312*, 313, 317 | 8 |  |
| 1 Arts and Humanities Elective* | 3 |  |

| Senior | | |
|--------|-----------------|
| Forestry, Wildlife and Fisheries 410, 412, 416 | 9 |  |
| Forestry 331, 332, 420, 422 | 8 |  |
| 1 Ethics Elective | 3 |  |
| 1 Cultures and Civilizations Elective* | 3 |  |
| 1 Arts and Humanities Elective* | 3 |  |
| 2 Communications Elective | 3 |  |
| 2 Electives | 2 |  |

Total 120

* Meets University General Education Requirement.
Choose from Anthropology 130*, Political Science 102*, Psychology 110* or 117*, Sociology 110*, 117*, or 120*.
Electives are chosen in conference with advisor.

General Education Electives: Choose two courses from the Cultures and Civilizations list and two from the Arts and Humanities list for a total of 12 credit hours. Forestry, Wildlife and Fisheries 312 meets the General Education Requirement for Communicating through Writing

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, and geology, as well as recreation and leisure studies.
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

Freshman

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
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<tr>
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<td>English 101*·102*</td>
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<tr>
<td>Mathematics 125*</td>
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<tr>
<td>Biology 111*·112*</td>
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<tr>
<td>Chemistry 100*</td>
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<tr>
<td>Psychology 110*, Sociology 120*, Political Science 102*, Sociology 110*, or Anthropology 130*</td>
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<td>1Cultures and Civilizations* or Arts and Humanities* Elective</td>
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<tr>
<td>2Elective</td>
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Sophomore

<table>
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<tr>
<th>Course</th>
<th>Hours Credit</th>
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<tbody>
<tr>
<td>Forestry, Wildlife and Fisheries 212</td>
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<tr>
<td>Forestry 214, 215</td>
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<tr>
<td>Economics 201*</td>
<td>4</td>
</tr>
<tr>
<td>Statistics 201*</td>
<td>3</td>
</tr>
<tr>
<td>Communication Studies 210* or 240*</td>
<td>3</td>
</tr>
<tr>
<td>Environmental and Soil Sciences 210</td>
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<tr>
<td>Select one from Art Media Arts 231, 236; Communication Studies 220, 270, 310, 320, 330, 420; English 295*, Journalism and Electronic Media 201*, 290, 412, 450*, 451*, 488*</td>
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</tr>
<tr>
<td>1Cultures and Civilizations* or Arts and Humanities* Electives</td>
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Junior

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
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</thead>
<tbody>
<tr>
<td>Forestry, Wildlife and Fisheries 312*, 313, 317</td>
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<td>Forestry 321, 423</td>
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<td>Forestry 314, Political Science 440, 441, Plant Sciences 427, or Management 440</td>
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<tr>
<td>Recreation 310, 410, 415, 430, 470</td>
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<tr>
<td>Biosystems Engineering Technology 212, 236; Geography 310, 410, 411, 413; Political Science 403; Agriculture and Natural Resources 290</td>
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<tr>
<td>Select one course from Sociology 345, 360, 370, 464, 465; Philosophy 245*; Geography 320, 323, 345</td>
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<tr>
<td>Select one course from Plant Sciences 280, 350, 370, 421, 437</td>
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<tr>
<td>1Cultures and Civilizations* or Arts and Humanities* Elective</td>
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Senior

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
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</thead>
<tbody>
<tr>
<td>Forestry 422,495</td>
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<tr>
<td>Forestry, Wildlife and Fisheries 412, 416</td>
<td>6</td>
</tr>
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<tr>
<td>2Electives</td>
<td>5-7</td>
</tr>
</tbody>
</table>

Total 120

*Meets University General Education Requirement.

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 • Wildlife and Fisheries Science Major • Wildlife and Fisheries Science Management Concentration

Freshman

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>Forestry, Wildlife and Fisheries 211 or 250*</td>
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<tr>
<td>English 101*-102*</td>
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<tr>
<td>Biology 130*-140* or 101*-102*</td>
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<tr>
<td>Chemistry 120*-130* or 100*-110*</td>
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</tr>
<tr>
<td>1Cultures and Civilizations* or Arts and Humanities Elective</td>
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</table>

Sophomore

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Statistics 201*</td>
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<td>Agriculture and Natural Resources 290</td>
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<tr>
<td>Biosystems Engineering Technology 326 or Geography 411</td>
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<tr>
<td>Mathematics 125*</td>
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<tr>
<td>Communication Studies 210* or 240*</td>
<td>3</td>
</tr>
<tr>
<td>Animal Science 220 or Ecology and Evolutionary Biology 350</td>
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<tr>
<td>Environmental and Soil Sciences 210</td>
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<tr>
<td>Economics 201*</td>
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<tr>
<td>Biology 250*</td>
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<td>1Cultures and Civilizations* or Arts and Humanities Elective</td>
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Junior

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>Forestry, Wildlife and Fisheries 212, 312*, 313, 317</td>
<td>11</td>
</tr>
<tr>
<td>Wildlife and Fisheries Science 305, 323, 340, 341, 350, 440, 442</td>
<td>16</td>
</tr>
<tr>
<td>Ecology and Evolutionary Biology 470 or Environmental and Soil Sciences 324</td>
<td>3-4</td>
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Senior

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
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<tbody>
<tr>
<td>Forestry, Wildlife and Fisheries 410, 416</td>
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<tr>
<td>Wildlife and Fisheries Science 443, 444, 445</td>
<td>9</td>
</tr>
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<td>Ecology and Evolutionary Biology 474</td>
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<tr>
<td>Forestry, Wildlife and Fisheries 412 or Forestry 321*, 422*</td>
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<tr>
<td>1Social Science Elective</td>
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Total 125-127

* Meets University General Education Requirement.

NOTE: Prerequisites will not be waived.

3Holds University General Education Requirement.

1General Education Electives: Choose two courses from the Cultures and Civilizations list and two from the Arts and Humanities list for a total of 12 credit hours. Forestry, Wildlife and Fisheries 312 meets the General Education Requirement for Communicating through Writing.

3Holds University General Education Requirement.

1General Education Electives: Choose two courses from the Cultures and Civilizations list and two from the Arts and Humanities list for a total of 12 credit hours. Forestry, Wildlife and Fisheries 312 meets the General Education Requirement for Communicating through Writing.

3Holds University General Education Requirement.
Requirements for the Bachelor of Science in Wildlife and Fisheries Science • Wildlife and Fisheries Science Major • Wildlife Health Concentration

Freshman

<table>
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<tr>
<th>Course</th>
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<tr>
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<tr>
<td>English 101*</td>
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<tr>
<td>Biology 130*</td>
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<td>Chemistry 120*</td>
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<tr>
<td>Statistics 201*</td>
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<td>Mathematics 125*</td>
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Sophomore

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<tr>
<td>Wildlife and Fisheries Science 201</td>
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<tr>
<td>Biology 240, 250</td>
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<tr>
<td>Chemistry 350, 360, 369</td>
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<td>Physics 221*</td>
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<tr>
<td>Microbiology 310, 319</td>
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Junior

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<tr>
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<tr>
<td>Biochemistry and Cellular and Molecular Biology 440</td>
<td>3</td>
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<td>Ecology and Evolutionary Biology 350</td>
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<td>Animal Science 380</td>
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<tr>
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<tr>
<td>Economics 201*</td>
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Senior

<table>
<thead>
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<tbody>
<tr>
<td>Forestry, Wildlife and Fisheries 410</td>
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<td>Wildlife and Fisheries Science 443, 444, 445</td>
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<tr>
<td>Microbiology 470 or <em>Wildlife and Fisheries 496</em></td>
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<tr>
<td>Biochemistry and Cellular and Molecular Biology 410</td>
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<tr>
<td><em>Social Science Elective</em></td>
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<tr>
<td><em>Cultures and Civilizations</em> or <em>Arts and Humanities Elective</em></td>
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Total 122

*Meets University General Education Requirement.

*General Education Electives: Choose two from the Cultures and Civilizations (CC) list, two courses from the Arts and Humanities (AH) list, one from the Social Sciences (SS) list for a total of 15 credit hours. One of the Cultures and Civilizations (CC) or Arts and Humanities (AH) or Social Sciences (SS) courses must be writing-intensive (WC).

*Must be a department-approved internship.

Minor in Wildlife and Fisheries Science

<table>
<thead>
<tr>
<th>Course</th>
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<tr>
<td>Forestry, Wildlife and Fisheries 211 or 250</td>
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<tr>
<td>Forestry, Wildlife and Fisheries 317</td>
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<tr>
<td>Select three from Forestry, Wildlife and Fisheries 410, 416; Wildlife and Fisheries Science 443, 444, 445</td>
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Total 15

Department of PLANT SCIENCES
http://plantsciences.utk.edu/

G. Neil Rhodes, Head

Professors

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Institution</th>
</tr>
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<tbody>
<tr>
<td>Albrecht, M.L.</td>
<td>(Associate Dean), PhD</td>
<td>Ohio State</td>
</tr>
<tr>
<td>Allen, F.L.</td>
<td>PhD</td>
<td>Minnesota</td>
</tr>
<tr>
<td>Augé, R.M.</td>
<td>PhD</td>
<td>Washington State</td>
</tr>
<tr>
<td>Bates, G.E.</td>
<td>PhD</td>
<td>Georgia</td>
</tr>
<tr>
<td>Denton, H.P.</td>
<td>PhD</td>
<td>North Carolina State</td>
</tr>
<tr>
<td>Dayton, D.E.</td>
<td>PhD</td>
<td>North Carolina State</td>
</tr>
<tr>
<td>Hayes, R.M.</td>
<td>PhD</td>
<td>Illinois</td>
</tr>
<tr>
<td>Lockwood, D.W.</td>
<td>PhD</td>
<td>Purdue</td>
</tr>
<tr>
<td>McDaniel, G.L.</td>
<td>PhD</td>
<td>Iowa State</td>
</tr>
<tr>
<td>Miller, R.D.</td>
<td>PhD</td>
<td>Kentucky</td>
</tr>
<tr>
<td>Mueller, T.C.</td>
<td>PhD</td>
<td>Georgia</td>
</tr>
<tr>
<td>Rhodes, G.N.</td>
<td>PhD</td>
<td>North Carolina State</td>
</tr>
<tr>
<td>Samples, T.J.</td>
<td>PhD</td>
<td>Oklahoma State</td>
</tr>
<tr>
<td>Sams, C.E.</td>
<td>(Austin Distinguished Professor), PhD</td>
<td>Michigan State</td>
</tr>
<tr>
<td>Stewart, C.N.</td>
<td>(Racheff Chair), PhD</td>
<td>Virginia Tech</td>
</tr>
<tr>
<td>West, D.R.</td>
<td>PhD</td>
<td>Nebraska</td>
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</table>

Associate Professors

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<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Institution</th>
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<tbody>
<tr>
<td>Cheng, Z.M.</td>
<td>PhD</td>
<td>Cornell</td>
</tr>
<tr>
<td>Gwathmey, C.O.</td>
<td>PhD</td>
<td>California (Riverside)</td>
</tr>
<tr>
<td>Hamilton, S.L.</td>
<td>EdD</td>
<td>Tennessee</td>
</tr>
<tr>
<td>Klingeman, W.E.</td>
<td>PhD</td>
<td>Georgia</td>
</tr>
<tr>
<td>Menendez, G.L.</td>
<td>MS</td>
<td>Tennessee</td>
</tr>
<tr>
<td>Pantalone, V.R.</td>
<td>PhD</td>
<td>North Carolina State</td>
</tr>
<tr>
<td>Robinson, D.K.</td>
<td>PhD</td>
<td>North Carolina State</td>
</tr>
<tr>
<td>Rogers, S.M.</td>
<td>MLA</td>
<td>Georgia</td>
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<tr>
<td>Stewart, C.E.</td>
<td>MLA</td>
<td>Georgia</td>
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Assistant Professors

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<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Institution</th>
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</thead>
<tbody>
<tr>
<td>Bailey, W.A.</td>
<td>PhD</td>
<td>Virginia Tech</td>
</tr>
<tr>
<td>Chen, F.</td>
<td>PhD</td>
<td>California (Davis)</td>
</tr>
<tr>
<td>Craig, C.C.</td>
<td>PhD</td>
<td>Louisiana State</td>
</tr>
<tr>
<td>Garton, S.</td>
<td>PhD</td>
<td>Minnesota</td>
</tr>
<tr>
<td>Kopsell, D.A.</td>
<td>PhD</td>
<td>Georgia</td>
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<tr>
<td>McElroy, J.S.</td>
<td>PhD</td>
<td>North Carolina State</td>
</tr>
<tr>
<td>Sorochan, J.C.</td>
<td>PhD</td>
<td>Michigan State</td>
</tr>
<tr>
<td>Steckel, L.E.</td>
<td>PhD</td>
<td>Illinois</td>
</tr>
<tr>
<td>Straw, R.A.</td>
<td>PhD</td>
<td>Tennessee</td>
</tr>
<tr>
<td>Thompson, M.A.</td>
<td>PhD</td>
<td>Tennessee</td>
</tr>
<tr>
<td>Zale, J.M.</td>
<td>PhD</td>
<td>Saskatchewan</td>
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</table>

Instructor

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<tr>
<th>Name</th>
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<tbody>
<tr>
<td>Flanagan, P.C.</td>
<td>MS</td>
<td>Tennessee</td>
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Adjunct Faculty

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<tr>
<th>Name</th>
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<tbody>
<tr>
<td>Ott, R.J.</td>
<td>MBA</td>
<td>Tennessee</td>
</tr>
<tr>
<td>Pepin, T.</td>
<td>MS</td>
<td>Tennessee</td>
</tr>
<tr>
<td>Rivero, R.E.</td>
<td>ED.D</td>
<td>Tennessee</td>
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</table>

Emeriti Faculty

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<tr>
<th>Name</th>
<th>Title</th>
<th>Institution</th>
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</thead>
<tbody>
<tr>
<td>Coffey, D.L.</td>
<td>PhD</td>
<td>Purdue</td>
</tr>
<tr>
<td>Reich, V.H.</td>
<td>PhD</td>
<td>Iowa State</td>
</tr>
</tbody>
</table>

Advisors

Hamilton, McDaniel, Menendez, Rogers, Sorochan, C. Stewart

Academic programs in the Department of Plant Sciences span the art, science and technology of plant use in society. Students receive preparation for careers in horticulture and agronomy within four concentrations: (1) landscape design and construction; (2) plant science, biotechnology and horticulture; (3) public horticulture; and (4) turfgrass science and management. With the increasing emphasis placed on plants in urban areas, we offer particularly extensive training in landscape horticulture: planning, implementation and management for landscapes, turf and gardens. We also offer comprehensive programs in plant biotechnology and plant production.

Upon entering our department, each student is assigned a faculty advisor to guide them in selection of career specialties and elective courses. The curriculum builds upon the university-wide general education requirements with critical courses in botany, soils, and business, and adds a set of required departmental courses specific to each concentration. Students are able to customize their program by selecting...
students must maintain a cumulative GPA of 2.25. Students are encouraged to earn a minor degree in a supportive field to further enhance their academic training and professional competitiveness. While firmly grounding students in the knowledge and skills of the plant sciences and arts, our curricula emphasize critical thinking and creative activity. Our students also gain the theoretical education necessary for continuing on for advanced degrees in plant related fields.

Internship or undergraduate research participation 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 and research experiences are available from the Department of Plant Sciences, other university departments and laboratories, and local commercial firms.

Our graduates find employment in a wide variety of professions. In working for others or within their own business, graduates of the landscape design concentration design residential landscapes, select proper woody and herbaceous plant materials for specific sites, restore native landscapes, specify specialty components dealing with landscape construction (irrigation, lighting, water features), prepare materials lists and cost estimates for landscape installations, and manage landscape crews. Turf majors have career opportunities in the industries involved with lawn management, athletic fields, golf courses, sales, and park and grounds maintenance. The public horticulture concentration prepares students for careers in botanic gardens, zoos and national parks; professional writing, television and radio; urban forestry; teaching; and municipal and university horticulture. Graduates in plant science, biotechnology and horticulture find employment in education, consulting, sales, agricultural extension, and research and development.

**Enrollment Management Plan**

Students should declare a concentration early in their undergraduate program and strictly follow the curriculum described for the concentration. Students who transfer into plant sciences from other colleges or programs must meet the same requirements as those entering the department as freshmen.

All students in the Department of Plant Sciences must meet certain requirements before registering for upper-division plant sciences classes. Admittance to each of the departmental concentrations will be determined by completion of core courses for a particular concentration with a C or better, completion of a minimum of 62 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 registering for upper-division courses. Faculty members will review student’s transcripts for completion of all core courses and cumulative GPA. Students must have completed all but three 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 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.

**Core Courses**

The core courses for the plant sciences concentrations, required for entry into upper-division courses are

**Landscape Design Concentration:** two courses in English composition (English 101 and 102 or equivalent); two courses in mathematics (Mathematics 123 and 125 or Mathematics 151 and 152 or equivalent); two courses in general chemistry (Chemistry 100 and 110 or 120 and 130 or equivalent); two courses in general botany (Biology 111 and 112 or equivalent); soil science (Environmental and Soil Sciences 210 or equivalent); Basic Landscape Plants (Plant Sciences 220 or equivalent); Fundamentals of Landscape Design (Plant Sciences 280 or equivalent).

**Plant Science, Biotechnology and Horticulture Concentration:** two courses in English composition (English 101 and 102 or equivalent); two courses in mathematics (Mathematics 123 and 125 or Mathematics 151 and 152 or equivalent); two courses in general chemistry (Chemistry 100 and 110 or 120 and 130 or equivalent); two courses in general botany (Biology 111 and 112 or equivalent); soil science (Environmental and Soil Sciences 210 or equivalent); Computer Applications to Problem Solving (Agriculture and Natural Resources 290 or equivalent).

**Public Horticulture Concentration:** two courses in English composition (English 101 and 102 or equivalent); Mathematics 113 or 123 or 151 or equivalent; Computer Sciences 100 or 102 or equivalent; general chemistry (Chemistry 100 and 110 or 120 and 130 or equivalent); two courses in general botany (Biology 111 and 112 or equivalent); soil science (Environmental and Soil Sciences 210 or equivalent); Plant Sciences 210 or equivalent; a plant materials course (Plant Sciences 220 or 230 or 290 or equivalent); Public Horticulture (Plant Sciences 226 or equivalent).

**Turfgrass Science and Management Concentration:** two courses in English composition (English 101 and 102 or equivalent); two courses in mathematics (Mathematics 123 and 125 or equivalent); two courses in general chemistry (Chemistry 100 and 110 or 120 and 130 or equivalent); two courses in general botany (Biology 111 and 112 or equivalent); soil science (Environmental and Soil Sciences 210 or equivalent); Turfgrass Management (Plant Sciences 240 or equivalent); Computer Applications to Problem Solving (Agriculture and Natural Resources 290 or equivalent).

**PLANT SCIENCES MAJOR**

**Landscape Design and Construction Concentration**

Landscape designers create aesthetic concepts and practical designs 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, contracting, 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 and construction are prepared for employment in several professions in ornamental horticulture. Careful selection of departmental courses and other electives in consultation with the assigned academic advisor will allow graduates to pursue suitable career paths.
## Requirements for the Bachelor of Science in Plant Sciences • Plant Sciences Major • Landscape Design and Construction Concentration

### Freshman

<table>
<thead>
<tr>
<th>Course</th>
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<td>Biology 111*, 112*</td>
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</tr>
<tr>
<td>Chemistry 100* or 120*</td>
<td>4</td>
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<tr>
<td>Computer Science 100* or 102*</td>
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<tr>
<td>English 101*, 102*</td>
<td>6</td>
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<td>Mathematics 113*, 123* or 151*</td>
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<tr>
<td>Plant Sciences 120</td>
<td>2</td>
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<tr>
<td>Social Sciences Elective*</td>
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### Sophomore

<table>
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<tr>
<th>Course</th>
<th>Hours Credit</th>
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</thead>
<tbody>
<tr>
<td>Arts and Humanities Elective*</td>
<td>3</td>
</tr>
<tr>
<td>Communication Studies 210* or 240*</td>
<td>3</td>
</tr>
<tr>
<td>Economics 201*</td>
<td>6</td>
</tr>
<tr>
<td>Environmental and Soil Sciences 210</td>
<td>4</td>
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<tr>
<td>Plant Sciences 210, 220, 280</td>
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<td>Technical Electives</td>
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<td>Unrestricted Electives</td>
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### Junior

<table>
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<tr>
<td>Communication Studies 210* or 240*</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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### Junior Year Summer

<table>
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### Senior

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<tr>
<td>Arts and Humanities Elective*</td>
<td>3</td>
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<tr>
<td>Communication Studies 210* or 240*</td>
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<tr>
<td>Economics 201*</td>
<td>4</td>
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<tr>
<td>Environmental and Soil Sciences 334</td>
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<tr>
<td>Plant Sciences 240, 241, 335, 370, 410, 430, 434, 435</td>
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<tr>
<td>Plant Sciences 457-458 or 457-459; Entomology and Plant Pathology</td>
<td>6</td>
</tr>
<tr>
<td>Technical Electives</td>
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</table>

### Total 124

*Meets University General Education Requirement.

Choose from the University General Education lists. Selection should be made in conference with academic advisor.

Students must meet the General Education requirement for Communicating through Writing by selecting a course with a (WC) designation. This course may be in the major or from another discipline.

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## Plant Science, Biotechnology and Horticulture Concentration

The plant science, biotechnology and horticulture concentration is designed for students pursuing professional careers in biotechnology, commercial production of agronomic and horticultural crops, or plant sciences. Careful selection of departmental courses and other electives in consultation with the assigned academic advisor will prepare graduates for the career of their choice. The concentration consists of two tracks of study: (1) emphasis in production horticulture and (2) emphasis in science and biotechnology.

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## Requirements for the Bachelor of Science in Plant Sciences • Plant Sciences Major • Plant Science, Biotechnology and Horticulture Concentration

### Freshman

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>Biology 111*, 112*</td>
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<tr>
<td>Chemistry 100 and 110*, or 120* and 130*</td>
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<td>English 101*, 102*</td>
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<tr>
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### Sophomore

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<tr>
<th>Course</th>
<th>Hours Credit</th>
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</thead>
<tbody>
<tr>
<td>Agriculture and Natural Resources 290</td>
<td>3</td>
</tr>
<tr>
<td>Agricultural Economics 212</td>
<td>3</td>
</tr>
<tr>
<td>Arts and Humanities Elective*</td>
<td>3</td>
</tr>
<tr>
<td>Communication Studies 210* or 240*</td>
<td>3</td>
</tr>
<tr>
<td>Cultures and Civilizations Elective*</td>
<td>3</td>
</tr>
<tr>
<td>Environmental and Soil Sciences 210</td>
<td>4</td>
</tr>
<tr>
<td>Economics 201*</td>
<td>4</td>
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</tr>
<tr>
<td>Social Sciences Elective*</td>
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<tr>
<td>Technical Electives</td>
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### Junior

<table>
<thead>
<tr>
<th>Course</th>
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</thead>
<tbody>
<tr>
<td>Arts and Humanities Elective*</td>
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</tr>
<tr>
<td>Arts and Humanities Elective*</td>
<td>3</td>
</tr>
<tr>
<td>Biochemistry and Cellular and Molecular Biology 321 or Forestry 414</td>
<td>4</td>
</tr>
<tr>
<td>Cultures and Civilizations Elective*</td>
<td>3</td>
</tr>
<tr>
<td>English 360* for Production Horticulture Track; or Chemistry 350 for Science and Biotechnology Track</td>
<td>3</td>
</tr>
<tr>
<td>Environmental and Soil Sciences 334</td>
<td>3</td>
</tr>
<tr>
<td>Plant Sciences 240, 241, 335, 370, 410, 430, 434, 435</td>
<td>8</td>
</tr>
<tr>
<td>Plant Sciences 457-458 or 457-459; Entomology and Plant Pathology</td>
<td>6</td>
</tr>
<tr>
<td>Technical Electives</td>
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</tr>
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### Senior

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts and Humanities Elective*</td>
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</tr>
<tr>
<td>Arts and Humanities Elective*</td>
<td>3</td>
</tr>
<tr>
<td>Plant Sciences 240, 241, 335, 370, 410, 430, 434, 435</td>
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<td>Plant Sciences 331 and Technical Electives for Production Horticulture Track; or Plant Sciences 461 for Science and Biotechnology Track</td>
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<td>Technical Electives</td>
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</tr>
</tbody>
</table>

### Total 124

*Meets University General Education Requirement.

Choose from the University General Education lists. Selection should be made in conference with academic advisor.

Students must meet the General Education requirement for Communicating through Writing by selecting a course with a (WC) designation. This course may be in the major or from another discipline.

---

## Public Horticulture Concentration

The public horticulture concentration is intended for students interested in professional careers that promote horticulture and emphasize people, their education and their 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. Technical electives allow students to concentrate in
specialties of their interest while encouraging the development of strong communication skills. Students are encouraged to earn a minor degree in a supportive field such as education, communications or journalism, or earn a Non-Profit Management Certificate.

Requirements for the Bachelor of Science in Plant Sciences • Plant Sciences Major • Public Horticulture Concentration

Freshman

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biology 111*, 112*</td>
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</tr>
<tr>
<td>Chemistry 100* or 120*</td>
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<tr>
<td>Computer Science 100* or 102*</td>
<td>3</td>
</tr>
<tr>
<td>English 101*, 102*</td>
<td>6</td>
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<td>Environmental and Soil Sciences 210</td>
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<td>Mathematics 113*, 123*, or 151*</td>
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Sophomore

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td><em>Arts and Humanities Electives</em></td>
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<td><em>Social Sciences Elective</em></td>
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<td>Technical Electives</td>
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Junior

<table>
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Junior Year Summer

<table>
<thead>
<tr>
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<td>Plant Sciences 492</td>
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Senior

<table>
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<tr>
<td>Entomology and Plant Pathology 410</td>
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<td>Plant Sciences 427, 430, 437, 446, 470</td>
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<td>Plant Sciences 448 or 494</td>
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<td>Technical Electives</td>
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<tr>
<td>Plant Sciences 421 or Unrestricted Electives</td>
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</tr>
</tbody>
</table>

Total 124

*T&meets University General Education Requirement.
*Choose from the University General Education lists. Selection should be made in conference with academic advisor.

Turfgrass Science and Management Concentration

The turfgrass science and 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. This concentration also prepares students for graduate studies in turfgrass science. Students are encouraged to earn a minor degree in a supportive field such as agricultural economics or environmental and soil sciences. Careful selection of departmental courses and other electives in consultation with the assigned academic advisor will prepare graduates for the career of their choice.

Requirements for the Bachelor of Science in Plant Sciences • Plant Sciences Major • Turfgrass Science and Management Concentration

Freshman

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
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<tbody>
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<td><em>Arts and Humanities Elective</em></td>
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<tr>
<td>Chemistry 100* and 110*, or 120* and 130*</td>
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</tr>
<tr>
<td><em>Cultures and Civilizations Elective</em></td>
<td>3</td>
</tr>
<tr>
<td>English 101*, 102*</td>
<td>6</td>
</tr>
<tr>
<td>Mathematics 123* and 125*, or 151* and 152*</td>
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<td>Plant Sciences 120</td>
<td>2</td>
</tr>
<tr>
<td><em>Social Sciences Elective</em></td>
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Sophomore

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
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<tbody>
<tr>
<td>Agriculture and Natural Resources 290</td>
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<tr>
<td>Biology 111*, 112*</td>
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<tr>
<td>Communication Studies 210* or 240*</td>
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<td>Economics 201*</td>
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<td>Environmental and Soil Sciences 210</td>
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<td>Plant Sciences 240, 241</td>
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<td>Plant Sciences 220 or 280</td>
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<td>Unrestricted Electives</td>
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Junior

<table>
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<th>Course</th>
<th>Hours Credit</th>
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<td><em>Cultures and Civilizations Elective</em></td>
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<td>Plant Sciences 290, 330, 331, 341, 343, 348, 457-458, 442</td>
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<tr>
<td>Plant Sciences 350 or 370</td>
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<td>Unrestricted Electives</td>
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Junior Year Summer

<table>
<thead>
<tr>
<th>Course</th>
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<td>Plant Sciences 492</td>
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Senior

<table>
<thead>
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<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural Economics 310</td>
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<td><em>Arts and Humanities Elective</em></td>
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<tr>
<td>Biosystems Engineering Technology 452, 462</td>
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</tr>
<tr>
<td>Biochemistry and Cellular and Molecular Biology 321</td>
<td>4</td>
</tr>
<tr>
<td>Entomology and Plant Pathology 313</td>
<td>3</td>
</tr>
<tr>
<td>Environmental and Soil Sciences 334</td>
<td>3</td>
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<tr>
<td>Plant Sciences 353 or 421 or 454</td>
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<td>Plant Sciences 435, 441, 470</td>
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<tr>
<td>Unrestricted Elective</td>
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</tr>
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</table>

Total 124

*T&meets University General Education Requirement.
*Choose from the University General Education lists. Selection should be made in conference with academic advisor.
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Minor in Plant Sciences

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
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<tbody>
<tr>
<td>Required Courses</td>
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<td>A minimum of 18 semester hours</td>
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<tr>
<td>of upper-division plant sciences courses</td>
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</tbody>
</table>

Total 18
ADDITIONAL ELECTIVES LIST FOR PLANT SCIENCES MAJOR

LANDSCAPE DESIGN AND CONSTRUCTION CONCENTRATION

Technical Electives
Architecture 111, 180, 211, 232, 421; Art 101, 103, 191, 295; Art Drawing 211, 212; Art Media Arts 231, 331; Art Painting 213, 214, 215, 216; Biochemistry and Cellular and Molecular Biology 306; Biology 250; Biosystems Engineering Technology 202, 212; Ecology and Evolutionary Biology 304, 330, 433; Communication Studies 230, 310; English 360*; Entomology and Plant Pathology 201, 306, 313, 321, 410; Environmental and Soil Science 324, 334; Forestry 321; Forestry Wildlife and Fisheries 211, 250, 311; Geography 365, 366; Geology 201, 202, 203; Philosophy 243*, 244, 245*; Political Science 402, 403, 446; Spanish 211, 212.

PLANT SCIENCES, BIOTECHNOLOGY AND HORTICULTURE CONCENTRATION

Technical Electives
Agricultural Economics 330, 342, 350, 412; Accounting 200; Biochemistry and Cellular and Molecular Biology 310, 330, 401, 402, 404; Biology 240; Biosystems Engineering Technology 326; Business Administration 201; Chemistry 350; Ecology and Evolutionary Biology 304, 410, 414, 433; English 360*; Entomology and Plant Pathology 451; Environmental and Soil Sciences 355, 442; Finance 301; Management 300; Marketing 300; Microbiology 210.

PUBLIC HORTICULTURE CONCENTRATION

Technical Electives
Accounting 415; Art 481; Agriculture and Extension Education 346; Communication Studies 440; Ecology and Evolutionary Biology 309, 330, 433; Educational Administration and Policy Studies 200; Educational Psychology 210; English 360*; Human Resource Development 440, 562; Philosophy 245*; Public Relations 270, 470; Recreation and Leisure Studies 201, 430.

Courses marked with an * meet University General Education requirements.
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.

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 six-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, Knoxville, 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, Knoxville, 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
- 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. Transfer students should apply by February 1, 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 and interior design 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 Web site.

**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 Satisfactory/No Credit. A student who desires to take a course Satisfactory/No Credit 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.

**School of ARCHITECTURE**

**Professors**

- Davis, M.K., MArch ............................................................Harvard
- Kelso, R.M., PhD ..............................................................Loughborough
- Kinzy, S.A., PhD ...............................................................State University of New York (Buffalo)
- Rabun, J.S., PhD ..............................................................York
- Robinson, M.A., MArch ....................................................Pennsylvania
- Shell, W.S., MArch ............................................................Columbia

**Associate Professors**

- Davis, T.K., MArch ..........................................................Cornell
- DeKay, M., MArch ............................................................Oregon
- Debelius, C.A., MArch ......................................................Harvard
- Fox, D., MArch .................................................................Crannock Academy of Art
- Martella, W.E., BArch .........................................................California (Berkeley)
- Moir-McClean, T., MArch ....................................................Michigan
- Schimmenti, M., MArch .....................................................Florida

**Assistant Professors**

- Ambrozia, K., MArch ..........................................................Princeton
- Dodds, G., PhD .................................................................Pennsylvania
- Klinkhammer, B., Dipl-Ing ................................................RWTH (Aachen)
- Stach, E., Dipl-Ing .............................................................RWTH (Aachen)

**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>Year</th>
<th>Hours Credit</th>
<th>Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First Year</strong></td>
<td></td>
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</tr>
<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>Architecture 211*</td>
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<td>English 101*, 102*</td>
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<td>Mathematics 125*</td>
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<td>Electives</td>
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<td><strong>Second Year</strong></td>
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<td>Architecture 271, 272</td>
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<td>Electives</td>
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<td><strong>Third Year</strong></td>
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<td>Architecture 371, 372</td>
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<td>Electives</td>
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<td>Architecture 471, 472</td>
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<td>Electives</td>
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<td>Architecture 480</td>
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<td>Design Course Option</td>
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<td>Electives</td>
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<tr>
<td><strong>Total 171</strong></td>
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<td></td>
</tr>
</tbody>
</table>

*Meets University General Education Requirement.

1 Students are not allowed to enroll simultaneously in two of these design courses.

2 Students are exempt from Mathematics 125 with a score of 25 or higher on the calculus readiness test. Students exempt from Mathematics 125 must take a higher level Quantitative Reasoning elective to meet General Education requirements.

3 Elective distribution: Two courses from the Social Sciences (SS) list. Two courses from the Cultures and Civilizations (CC) list (which includes intermediate-level foreign languages). Twelve hours of architecture electives. Fifteen hours of non-architecture electives, which must include one course from the Natural Sciences (NS) list with a laboratory and one course from the Communicating Orally (OC) list. Twelve hours of free electives.

4 Design Course Option: Architecture 481, 482, 483, 484, 485, 486, or 489. Architecture 472 may be taken at any time in the last three semesters.

### 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 mathematics) 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.
Electives on the 300- and 400-level 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 students.

Special Topic Design Studios

For many years, the school has provided opportunities for students to participate in off-campus design studios located in urban areas of the state. These studios combine creative work with community service to make an exceptional learning experience for advanced students. 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, Knoxville, 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, Knoxville, 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 UT Knoxville 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 designs with practicing architects.

Architects, 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
DeLong, A. PhD .................................................. Pennsylvania State
Rabun, J., PhD ............................................................. Tennessee

Associate Professor
Robinson, M.B., MS ............................................... Massachusetts
Tan, M., MFA ............................................................... Iowa State

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 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

<table>
<thead>
<tr>
<th>First Year</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Architecture 121, 171, 172</td>
<td>9</td>
</tr>
<tr>
<td>Interior Design 141, 171, 172</td>
<td>8</td>
</tr>
<tr>
<td>1Mathematics 123* or 125*</td>
<td>3</td>
</tr>
<tr>
<td>1English 101*, 102*</td>
<td>6</td>
</tr>
<tr>
<td>1Social Sciences Elective*</td>
<td>3</td>
</tr>
<tr>
<td>1Natural Sciences Elective (must have a lab)*</td>
<td>4</td>
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<table>
<thead>
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<th>Second Year</th>
<th>Hours Credit</th>
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<tbody>
<tr>
<td>Interior Design 200, 221, 261, 271, 272</td>
<td>19</td>
</tr>
<tr>
<td>Architecture 231</td>
<td>3</td>
</tr>
<tr>
<td>Art History 172*, 173*</td>
<td>6</td>
</tr>
<tr>
<td>1Physics 161*</td>
<td>3</td>
</tr>
<tr>
<td>Communicating through Writing Elective*</td>
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<table>
<thead>
<tr>
<th>Third Year</th>
<th>Hours Credit</th>
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</thead>
<tbody>
<tr>
<td>Interior Design 311, 312, 331, 371, 372, 360, 460*</td>
<td>27</td>
</tr>
<tr>
<td>Materials Science and Engineering 220</td>
<td>3</td>
</tr>
<tr>
<td>1Communicating Orally Elective*</td>
<td>3</td>
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</table>

<table>
<thead>
<tr>
<th>Fourth Year</th>
<th>Hours Credit</th>
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</thead>
<tbody>
<tr>
<td>Interior Design 471, 472, 480</td>
<td>16</td>
</tr>
<tr>
<td>1Elective (Art Studio)</td>
<td>3</td>
</tr>
<tr>
<td>1Elective (Professional)</td>
<td>3</td>
</tr>
<tr>
<td>1Cultures and Civilizations Electives*</td>
<td>6</td>
</tr>
<tr>
<td>1Social Sciences Elective*</td>
<td>3</td>
</tr>
<tr>
<td>Elective</td>
<td>3</td>
</tr>
</tbody>
</table>

Total 137

*Meets University General Education Requirement.
1Select Mathematics 123 or 125 (required) and Interior Design 460 (required).
1Select 101, 102 (required) and one other writing-intensive course (WC).
1Select 6 hours from Anthropology 130, Psychology 110; Sociology 110, 120; Economics 201 (if you plan to take Business as a minor); Women’s Studies 230; or other approved course (SS) designated.
1Select Physics 161 (required) and one other designated Natural Science (NS) such as Astronomy 161, Biology 101, Biology 111, Chemistry 120, Geology 101.
1Select 3 hours from Communication Studies 210 or 240.
1Select any Art, Art Ceramics, Art Design/Graphics, Art Drawing, Art Media Arts, Art Painting, Art Printmaking, or Art Sculpture.
1Select from interior design or approved architecture courses not required for graduation.
1Select 6 hours from Classics 201; Asian Studies 101, 102; any designated history course (CC); Medieval Studies 201; Religious Studies 101, 102; or two foreign language (CC) designated.

Progression and Retention

Upon admission to the University of Tennessee, Knoxville, and the college, students may begin the interior design major. Progression into third year occurs after completion of Interior Design 272.

For progression into third year, students must meet the following criteria.

- cumulative grade point average of 2.3 or greater.
- cumulative grade point average in the major of 3.0 or greater in the following interior design courses: 141, 171, 200, 221, 271, 272, 231, 261, with no grade below a C.
- Portfolio Review accepted by faculty.
- successful interview following completion of Interior Design 272.

For retention, student must meet the following criteria.

- before enrolling in any interior design course, a grade of C or better must be made in each prerequisite required interior design course.
- cumulative grade point average of 2.3 or greater.
- grade of I must be removed before registration for next interior design course.

For graduation from the interior design program, students must meet the following criteria.

- grade of C or better in all interior design 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, Knoxville, 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.
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 26 departments and schools and 13 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, Knoxville. 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, Knoxville, 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 26 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, 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 120 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 majors 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, Knoxville, 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 (above) 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.
Communicating Orally

The ability to communicate one’s ideas orally is as important as the ability to express them in writing. All students must fulfill the University General Education Requirement by completing one course with an (OC) designation. The OC course may or may not be within the student’s major. OC courses may also satisfy college distribution requirements.

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; Classics (Greek) 261 and 264; Classics (Latin) 251 and 252; Italian 211-212; 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 and Quantitative Reasoning

Skills in mathematics, quantitative 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 two of the following courses, or one of the following courses and Computer Science 100 or 102.

• Mathematics 113, 115, 117, 123, 125, 141, 142, 147, 148, 151, 152, 202

• Statistics 201, 207

Communicating through Writing

To fulfill the University General Education Requirement, all students must complete the first year composition sequence described above, and, upon completion of English 101 and 102 or their equivalent, take one other courses designated as (WC) in the Undergraduate Catalog. The WC course may or may not be within the student’s major. WC courses may also satisfy college distribution requirements.

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 Language 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 are available from the English Department.

A student must complete the English composition requirement prior to enrolling in English courses numbered 200 or higher.
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 course 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 course from List A or List B.

List A
Astronomy 161-162, 217-218; Biology 101-102, 111-112; Chemistry 100-110, 120-130, 128-138; Geography 131-132; two from Geology 101, 102, 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, 304; Astronomy 151; Biochemistry and Cellular and Molecular Biology 230, 306 (same as Anthropology 304); Biology 130, 157; Chemistry 150, 160; Computer Science 140, 160; Ecology and Evolutionary Biology 309, 330, 410; Geology 201, 202, 203, 205; Microbiology 210; Physics 101, 102.

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 from at least two departments listed below. To meet the university’s general education requirement, two of the courses selected must be from List A. The other courses can be chosen from List A or List B. Bachelor of Science students must complete two courses from different departments. To meet the university’s general education requirement, both courses must be selected from List A.

List A
African and African-American Studies 201, 202; Anthropology 130; Economics 201, 207; Geography 101, 102; Political Science 102; Psychology 110, 117; Sociology 110, 117, 120, 127.

List B
African and African-American Studies 310; Anthropology 120, 362; Audiology and Speech Pathology 320; Communication Studies 201, 220, 260, 330; Ecology and Evolutionary Biology 304; Educational Psychology 210; Geography 320; Global Studies 250; Linguistics 200; Musicology 290, 310; Political Science 101, 107; Psychology 220, 360; Religious Studies 232, 301; Sociology 232, 250, 344, 370; 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.

To meet the university’s general education requirement, students must choose two courses identified by an asterisk (*) from the list of courses below.

Bachelor of Arts Students must complete three courses. At least two of the three courses must be chosen from those indicated by asterisks (*). In addition, one course must be selected from List A, one from List B, and one from List A, B, or C. Bachelor of Science students must complete two courses. Both courses must be chosen from those indicated by asterisks (*). One course must be selected from List A or B.

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

List B: Philosophical and Religious Thought

List C: Study or Practice of the Arts

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 United States 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 list and one course from the other list. Bachelor of Science students must complete one course from each list. All courses are writing-emphasis courses.

List A: United States Studies
African and African American Studies 315, 331, 333, 343, 352, 364, 429, 445, 446, 480, 483; American Studies 310, 312, 334, 343, 355, 423, 469; Anthropology 305, 310, 312, 315, 320, 321, 360, 363; Art History 471, 472, 473, 483; Cinema Studies 312, 334, 469; Communication Studies 450, 466, 469, 476; 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, 445, 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, 343, 455; Urban Studies 441; Women’s Studies 310, 332, 340, 434, 453, 466, 469, 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, 461, 462, 463; 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, 464; Asian Languages 315, 413; Cinema Studies 315; History 389, 390, 391, 392; Japanese 413, 451, 452; Philosophy 374, 376, 379; Political Science 454; Religious Studies 374, 376, 379, 383, 474.

Europe
Anthropology 436, 462; Art History 425, 431, 441, 442, 451, 452, 453, 454, 475, 476; Cinema Studies 323, 325, 420, 421; Classics 381, 382, 383, 436; English 301, 302, 321, 401, 422; French 420, 431, 432; Geography 371; German 323, 350, 363; History 319, 320, 323, 429, 432, 490; Italian 414, 421; Judaic Studies 322, 350, 431; Linguistics 321; Medieval Studies 322, 403, 405, 441, 442, 451; Philosophy 320, 322, 324, 326; Political Science 361, 459; Russian 325, 371, 372; Women’s Studies 383, 422, 432.

Latin America

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.

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. Courses taken to satisfy the University’s OC and WC requirements may, when appropriate, be used in the major. An additional six credits taken in the major may also be used to satisfy basic skills or divisional distribution requirements. A minimum grade of C must be earned in every course counted as part of the major. This grade requirement does not apply to prerequisites and corequisites unless the department has specific progression requirements.

Students transferring from other institutions must complete at least nine credit hours at the University of Tennessee, Knoxville, 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. At least six of the 15 credit hours required for a minor must be completed at the University of Tennessee, Knoxville.

Business Administration Minor for Non-Business Students

Requirements include the following courses: Accounting 200, Economics 201, Statistics 201, Business Administration 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.

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.

Program for Prospective K-12 Teachers

Student planning careers in K-12 teaching must complete an Arts and Sciences major in a department, in one of the interdisciplinary 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 any major in the College of Arts and Sciences.

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 Sciences, 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.

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, but will be required to meet the university’s General Education requirements.

Further information and applications may be obtained from Arts and Sciences Advising Services.

INDIVIDUALIZED PROGRAM

Existing Arts and Sciences majors will satisfy the needs of most students entering the university. Some, however, come with particular strengths in their preparation or with special interests which do not coincide with traditional departmental or interdepartmental majors. 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. Individualization takes place in the area of concentration. The quantitative aspect of the area of concentration is the same as for most majors 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. Students must submit their proposals for review by the committee prior to the completion of 75 hours of coursework. For further information contact Arts and Sciences Advising Services.

**MEDICAL TECHNOLOGY MAJOR**

Students who complete the medical technology curriculum receive the Bachelor of Science degree with a major in medical technology from the College of Arts and Sciences. The curriculum requires a minimum of 90 hours of credit which includes the basic skills and distribution requirements of the college and the University General Education Requirement prior to application for admission to the last year of the study at the University of Tennessee Medical Center, Knoxville (UTMCK). After the course of study is completed, UTMCK awards the student a Certificate of Laboratory Training. Students are then eligible for examination by the Board of Registry of the American Society of Clinical Pathologists to earn certification as registered medical technologists.

**Requirements for the Bachelor of Science • Medical Technology Major**

<table>
<thead>
<tr>
<th>Freshmen</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>English 101*-102*</td>
<td>6</td>
</tr>
<tr>
<td>Biology 130 (see Note 1)</td>
<td>4</td>
</tr>
<tr>
<td>Biology 140</td>
<td>4</td>
</tr>
<tr>
<td>Chemistry 120*-130*</td>
<td>8</td>
</tr>
<tr>
<td>Foreign Language - Intermediate Level* (see Note 2)</td>
<td>6</td>
</tr>
<tr>
<td>Mathematics* (see Note 3)</td>
<td>6</td>
</tr>
<tr>
<td>Communication Studies 210* or 240*</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sophomore</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemistry 110 (see Note 4)</td>
<td>5</td>
</tr>
<tr>
<td>Biochemistry and Cellular and Molecular Biology 230</td>
<td>4</td>
</tr>
<tr>
<td>Biology 240</td>
<td>4</td>
</tr>
<tr>
<td>Microbiology 310-319</td>
<td>5</td>
</tr>
<tr>
<td>Humanities* (one course from List A or B)</td>
<td>3</td>
</tr>
<tr>
<td>Non-US History*</td>
<td>6</td>
</tr>
<tr>
<td>Communicating through Writing (WC) course*</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Junior</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemistry 310-319</td>
<td>4</td>
</tr>
<tr>
<td>Biochemistry and Cellular and Molecular Biology 310 (see Note 4)</td>
<td>4</td>
</tr>
<tr>
<td>Microbiology 420-429</td>
<td>5</td>
</tr>
<tr>
<td>Microbiology 430</td>
<td>3</td>
</tr>
<tr>
<td>Social Sciences* (see Note 5)</td>
<td>6</td>
</tr>
<tr>
<td>Humanities* (one course from List A, B, or C)</td>
<td>3</td>
</tr>
<tr>
<td>Upper-Level Distribution (one course from List A and one course from List B)</td>
<td>6</td>
</tr>
<tr>
<td>Elective (see Note 6)</td>
<td>0-3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Senior</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Medical Technology course of study at UT Medical Center in Knoxville (12 month program)</td>
<td>36</td>
</tr>
</tbody>
</table>

**Total 120 (minimum)**

*Meets University General Education Requirement.

**NOTES:**

1. Students who have previously completed Biology 101 and 102 for their lab science requirement may substitute these two courses for Biology 130.

2. This plan assumes a student has had enough language background in high school to begin the intermediate language sequence at UTK.

3. Math 115-125, Math 123-125, Math 151-152, or Math 141-142 are required for pre-medical technology students. Math placement depends on high school courses and grades, ACT scores, and BA/BS requirements.

4. Students who have completed Chemistry 350-360, 369 may substitute it for Biochemistry 310 and Chemistry 110.

5. BS students must complete a minimum of two courses from the University General Education requirement in Social Sciences. The courses must be from two departments.

6. Classics 273 Medical and Scientific Terminology is a highly recommended elective. One year of U.S. history must have been completed in high school or college prior to graduation from the medical technology program.

**Pre-Professional Programs 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 90 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 120 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, Knoxville, 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>Freshman</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>English 101*-102*</td>
<td>6</td>
</tr>
<tr>
<td>Biology 130 (see Note 1)</td>
<td>4</td>
</tr>
<tr>
<td>Biology 140</td>
<td>4</td>
</tr>
<tr>
<td>Chemistry 120*-130*</td>
<td>8</td>
</tr>
<tr>
<td>Humanities* (see Note 4)</td>
<td>6</td>
</tr>
<tr>
<td>Communication Studies 210* or 240*</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sophomore</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemistry 350-360, 369</td>
<td>8</td>
</tr>
<tr>
<td>Physics 211-222</td>
<td>8</td>
</tr>
<tr>
<td>Foreign Language Intermediate Level* (see Note 3)</td>
<td>6</td>
</tr>
<tr>
<td>Humanities* (see Note 4)</td>
<td>3-6</td>
</tr>
<tr>
<td>Non-U.S. History*</td>
<td>6</td>
</tr>
<tr>
<td>Communicating Studies 210* or 240*</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Senior</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Medical Technology course of study at UT Medical Center in Knoxville (12 month program)</td>
<td>36</td>
</tr>
</tbody>
</table>
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.

Requirements for the Bachelor of Science • Pre-Professional Programs Major • Pre-Medical 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>Biology 130 (see Note 1)</td>
<td>4</td>
</tr>
<tr>
<td>Biology 140</td>
<td>4</td>
</tr>
<tr>
<td>Chemistry 120*-130*</td>
<td>8</td>
</tr>
<tr>
<td>Mathematics* (see Note 2)</td>
<td>6</td>
</tr>
<tr>
<td>Electives</td>
<td>3</td>
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</table>

**Sophomore**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemistry 350-360, 369</td>
<td>8</td>
</tr>
<tr>
<td>Physics 211-222</td>
<td>8</td>
</tr>
<tr>
<td>Foreign Language Intermediate Level* (see Note 3)</td>
<td>6</td>
</tr>
<tr>
<td>Humanities* (see Note 4)</td>
<td>3-6</td>
</tr>
<tr>
<td>Non-U.S. History*</td>
<td>6</td>
</tr>
<tr>
<td>Communication Studies 210* or 240*</td>
<td>3</td>
</tr>
</tbody>
</table>

**Junior**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Humanities* (see Note 4)</td>
<td>3</td>
</tr>
<tr>
<td>Communicating through Writing (WC) course*</td>
<td>3</td>
</tr>
<tr>
<td>Social Sciences* (see Note 5)</td>
<td>6-12</td>
</tr>
<tr>
<td>Upper-Level Distribution (see Note 6)</td>
<td>6-9</td>
</tr>
<tr>
<td>Electives to reach total (see Note 7)</td>
<td>90 minimum</td>
</tr>
</tbody>
</table>

**Senior**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Completion of major program and Bachelor of Arts/Bachelor of Science requirements or completion of one year at the University of Tennessee Health Science Center in Memphis.</td>
<td>120</td>
</tr>
</tbody>
</table>

Notes:
1. Pre-dentistry students who have previously completed Biology 101 and 102 may substitute this sequence for Biology 130.
2. Math placement depends on high school courses and grades, ACT scores, the Math placement exam, and BA/BS requirements. Math 130 or any calculus course is a prerequisite to Physics. At least two courses must satisfy the University General Education Requirement in Quantitative Reasoning.
3. This plan assumes a student has had enough language background in high school to begin an intermediate language sequence at UTK.
4. BA students must select one course from List A: Literature, one course from List B: Philosophical and Religious Thought, and one additional course from List A B, or C. BS students must complete a minimum of two courses from the three lists under the humanities requirement; not more than one course may be taken from List C. At least two courses must satisfy the University General Education Requirement in Humanities.
5. BA students must complete a minimum of four courses from at least two departments; BS students must complete a minimum of two courses from two departments. At least two courses must satisfy the University General Education Requirement in Social Sciences.
6. BA students must complete one course from List A: US Studies, one course from List B: Foreign Studies, and one additional course from List A or B. BS students must complete one course from List A and one from List B.
7. Recommended electives include Biology 240 Genetics, Microbiology 310-319 Introduction to Microbiology, BCM 330-331 Animal Development and Embryology; 421 Cell and Tissue Structure and Function, 230 Human Physiology, EEB 350 Comparative Vertebrate Biology, Anthropology 480 Human Osteology, and Anthropology 485 Oral Biology. Courses such as economics, philosophy, psychology, social science, and other arts and sciences courses are also recommended to provide the applicant with a well-rounded education.

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 90 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 120 or more credit hours while enrolled in the college. 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, Knoxville, before entering UT Health Science Center, Memphis.
7. Although not specifically required, Biology 240 Genetics and Microbiology 310-319. Introduction to Microbiology are recommended as preparation for the MCAT. Additional recommended courses include: BCMB 330-331 Animal Development and Embryology; 401-402 Biochemistry-Molecular Biology; 421 Cell and Tissue Structure and Function; 440 General Physiology.

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 (PharmD) 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 first-year program leading to a Bachelor of Science degree and the fourth-year program leading to either a Bachelor of Arts or Bachelor of Science degree from the University of Tennessee, Knoxville, 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 90 credit hours while enrolled in the College of Arts and Sciences, and the Bachelor 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 120 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, Knoxville, before enrolling in the College of Pharmacy.

Requirements for the Bachelor of Science • Pre-Professional Programs Major • Pre-Pharmacy Concentration

<table>
<thead>
<tr>
<th>Freshman</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>English 101*.102* or equivalent</td>
<td>6</td>
</tr>
<tr>
<td>Chemistry 120*.130*</td>
<td>8</td>
</tr>
<tr>
<td>Biology 130 (see Note 1)</td>
<td>4</td>
</tr>
<tr>
<td>Biology 140</td>
<td>4</td>
</tr>
<tr>
<td>Mathematics 125*, 141*, or 152* (see Note 2)</td>
<td>3-4</td>
</tr>
<tr>
<td>Statistics 201*</td>
<td>3</td>
</tr>
<tr>
<td>Foreign Language - Intermediate Level* (see Note 3)</td>
<td>6</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Sophomore</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemistry 350-360 and 369</td>
<td>8</td>
</tr>
<tr>
<td>Biology 240</td>
<td>4</td>
</tr>
<tr>
<td>Physics 221</td>
<td>4</td>
</tr>
<tr>
<td>Communication Studies 210* or 240*</td>
<td>3</td>
</tr>
<tr>
<td>Social Sciences* (see Note 4)</td>
<td>6</td>
</tr>
<tr>
<td>Non-U.S. History*</td>
<td>6</td>
</tr>
<tr>
<td>Humanities* (see Note 5)</td>
<td>3-6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Junior</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biochemistry and Cellular and Molecular Biology 401-402</td>
<td>8</td>
</tr>
<tr>
<td>Social Sciences* (see Note 4)</td>
<td>6-8</td>
</tr>
<tr>
<td>Humanities* (see Note 5)</td>
<td>3-6</td>
</tr>
<tr>
<td>Upper-Level Distribution (see Note 6)</td>
<td>6-9</td>
</tr>
<tr>
<td>Microbiology 210 or 310-319 (see Note 7)</td>
<td>3-5</td>
</tr>
<tr>
<td>Microbiology 430</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>Communicating through Writing (WC) course* (see Note 8)</td>
<td>0-3</td>
</tr>
</tbody>
</table>

Total 100 minimum

NOTES:

1. Pre-pharmacy students who have previously completed Biology 101 and 102 may substitute this sequence for Biology 130.
2. Math placement depends on high school courses and grades, ACT scores, and BA/BS requirements. If a student is considering a major in a biological or physical science, he/she should consult the catalog for the appropriate math courses.
3. This plan assumes a student has had enough background in high school to begin an intermediate language sequence at UT.
4. At least two social science courses should be selected from Economics 201, Political Science 102, Psychology 110, Sociology 110, 120. BA students must complete a minimum of four courses from at least two departments; BS students must complete a minimum of two courses from at least two departments.
5. BA students must select one course from List A: Literature, one course from List B: Philosophical and Religious Thought, and one additional course from List A, B, or C. BS students must complete a minimum of two courses from the three lists under the humanities requirement; not more than one course may be taken from List C. At least two courses must satisfy the University General Education Requirement in Arts and Humanities.
6. BA students must complete one course from List A: US Studies, one course from List B: Foreign Studies, and one additional course from List A or B. BS students must complete one course from List A and one from List B.
7. Students choosing to complete a BS in Biological Sciences from the University of Tennessee, Knoxville, should consider completing Microbiology 310-319 for this requirement since Microbiology 210 will not fulfill a major requirement. Microbiology 310 has a prerequisite of Biology 140 and a corequisite of Biology 240.
8. If a course taken for the humanities requirement also appears on the Communicating through Writing (WC) General Education approved list, no additional course is required here.

Nuclear Medicine Technology Concentration

The nuclear medicine technology curriculum requires a minimum of 90 hours credit, including the college’s basic skills and distribution requirements and the University General Education Requirement, 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 with a major in pre-professional programs with a (concentration in nuclear medicine technology) from the College of Arts and Sciences.

Admission to the nuclear medicine 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

<table>
<thead>
<tr>
<th>First Year</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>English 101*.102*, or equivalent</td>
<td>6</td>
</tr>
<tr>
<td>Chemistry 120*.130*</td>
<td>8</td>
</tr>
<tr>
<td>Mathematics* (see Note 1)</td>
<td>6-8</td>
</tr>
<tr>
<td>Biology 130 (see Note 2)</td>
<td>4</td>
</tr>
<tr>
<td>Biology 140</td>
<td>4</td>
</tr>
<tr>
<td>Communication Studies 210*</td>
<td>3</td>
</tr>
</tbody>
</table>
Sophomore
Chemistry 350-360, 369 ........................................... 8
Foreign Language - Intermediate Level* (see Note 3) ........... 6
Non-U.S. History* .................................................. 6
Humanities* (one course from List A or B) ....................... 3
Social Sciences* (see Note 4) ..................................... 6
Computer Science 100 or 102 ..................................... 3-4

Junior
Biochemistry and Cellular and Molecular Biology 230 ............ 5
Ecology and Evolutionary Biology 240 ............................ 4
Physics 221-222 ...................................................... 8
Humanities* (one course from List A, B, or C) .................... 3
Upper-Level Distribution B (one course from List A and one course from List B) ........................................ 6
Communicating through Writing (WC) course* ................... 3

Senior
Completion of Nuclear Medicine Technology program at the University of Tennessee Medical Center, Knoxville UTMCK (12 month program) or completion of major program and Bachelor of Arts or Bachelor of Science requirements.

Fall Semester
410 Physics for Nuclear Medicine I ................................ 3
411 Nuclear Instrumentation ........................................ 3
412 Radiopharmacy .................................................. 2
420 Clinical Nuclear Medicine I .................................... 4
450 Clinical Practicum I ............................................. 4

Spring Semester
415 Physics for Nuclear Medicine II ............................... 3
425 Computer Applications in Nuclear Medicine .................. 3
430 Clinical Nuclear Medicine II ................................... 4
460 Clinical Practicum II ............................................ 6

Summer Semester
475 Nuclear Medicine Registry Review ............................ 2
440 Clinical Nuclear Medicine III .................................. 4
470 Clinical Practicum III .......................................... 6

Clinical Year Total 44

*Meets University General Education Requirement.

NOTES:
1. Math placement depends on high school courses and grades, ACT scores, and BA/BS requirements. All students must complete the Mathematics and Quantitative Reasoning Basic Skills requirement as outlined in the Arts and Sciences Curriculum Guide. Math 130 or any calculus course is a prerequisite for Physics.
2. Students who have previously completed Biology 101 and 102 may substitute these two courses for Biology 130.
3. This plan assumes a student has had enough language background in high school to begin an intermediate language sequence at UT, Knoxville.
4. Bachelor of Science students must complete a minimum of 6 credits from at least two departments for the Social Science requirement. The two courses must satisfy the University General Education Requirement in Social Sciences.

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 92 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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<thead>
<tr>
<th>Freshman</th>
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<tbody>
<tr>
<td>English 101*-102* ........................................ 6</td>
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<tr>
<td>Chemistry 120*-130* ...................................... 8</td>
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<tr>
<td>Biology 130 (see Note 1) .................................. 4</td>
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<td>Biology 140 .................................................. 4</td>
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<td>Mathematics* (see Note 2) ................................. 6-8</td>
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<td>Foreign Language - Intermediate Level Sequence* (see Note 3) ........ 6</td>
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<th>Sophomore</th>
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<tr>
<td>Chemistry 350-360, 369 .................................. 8</td>
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</tr>
<tr>
<td>Physics 221-222 ............................................. 8</td>
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<tr>
<td>Biology 240 .................................................. 4</td>
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<td>Social Sciences* (see Note 4) ............................. 3-6</td>
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<tr>
<td>Communication Studies 210* or 240* ...................... 3</td>
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<th>Junior</th>
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<td>Biochemistry and Cellular and Molecular Biology 401-402 ........ 8</td>
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<td></td>
</tr>
<tr>
<td>Social Sciences* (see Note 4) ................................ 3-6</td>
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<td>Humanities* (see Note 5) .................................... 6-9</td>
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<td>Upper-Level Distribution (see Note 6) ........................ 6-9</td>
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<td>Cellular Biology Elective (see Note 7) ........................ 3</td>
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<tr>
<td>Communicating through Writing (WC) course* (see Note 8) ....... 0-3</td>
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Total 92 minimum

Senior
Completion of major program and Bachelor of Arts/Bachelor of Science requirements or completion of one year at the University of Tennessee College of Veterinary Medicine.

NOTES:
1. Students who have previously completed Biology 101 and 102 may substitute these two courses for Biology 130.
2. Math placement depends on high school courses and grades, ACT scores, and BA/BS requirements. Math 130 or any calculus course is a prerequisite for Physics. At least two courses must satisfy the University General Education Requirement in Quantitative Reasoning.
3. This plan assumes a student has had enough language background in high school to begin an intermediate language sequence at UT, Knoxville.
4. BA students must complete a minimum of four courses from at least two departments; BS students must complete a minimum of two courses from two departments. At least two courses must satisfy the University General Education Requirement in Social Science.
5. BA students must select one course from List A: Literature, one course from List B: Philosophical and Religious Thought, and one additional course from List A, B, or C. BS students must complete a minimum of two courses from the three lists under the humanities requirement; not more than one course may be taken from List C. At least two courses must satisfy the University General Education Requirement in Arts and Humanities.
6. BA students must complete one course from List A: US Studies, one course from List B: Foreign Studies, and one additional course from List A or B. BS students must complete one course from List A and one from List B.
7. Upper-division cell or molecular biology courses are preferred.
8. If a course taken for the humanities requirement also appears on the Communicating through Writing (WC) General Education approved list, no additional course is required here.
African and African-American Studies  
See Interdisciplinary Programs.

American Studies  
See Interdisciplinary Programs.

Department of ANTHROPOLOGY  
http://web.uark.edu/~anthrop/

Andrew Kramer, Head

Professors  
Bass, W.M., (Alumni Distinguished Service Professor), PhD ........................................ Pennsylvania  
Faulkner, C.H. (Distinguished Professor), PhD ...................................................... Indiana  
Howell, B.J., PhD .................................................................................... Kentucky  
Jantz, R.L., PhD ................................................................................. Kansas  
Klioppel, W.E., PhD ............................................................................ Missouri  
Königsberg, L., PhD ............................................................................ Northwestern  
Logan, M.H., PhD .............................................................................. Penn State  
Schroedl, G.F., PhD ............................................................................ Washington State  
Simek, J.F. (Distinguished Professor), PhD ........................................ State University of New York (Binghamton)

Associate Professors  
Anderson, D.G., PhD ............................................................................ Michigan  
Kramer, A., PhD .................................................................................... Michigan  
Marks, M., PhD ................................................................................. Tennessee

Assistant Professors  
Harper, J.L., PhD .................................................................................... Michigan

Research Director  
Driskell, B.N., PhD ............................................................................ Kentucky  

Research Associate Director  
Sherwood, S., PhD ................................................................................ Tennessee

Research Associate Professor  
Chapman, J. (Director, F.H. McClung Museum, PhD) .................................. North Carolina

Research Assistant Professor and Curator  
Frankenberg, S., PhD ........................................................................... Northwestern

Research Assistant Professors  
Ahman, T.M., PhD ................................................................................ Tennessee  
Elam, M., PhD .................................................................................... Missouri  
Herrmann, N.P., PhD ........................................................................ Tennessee  
Sichler, J.A., PhD ................................................................................. Tennessee  
Vass, A.A., PhD .................................................................................... Tennessee

Lecturer and Coordinator, Forensic Center  
Jantz, L.M., PhD ................................................................................... Tennessee

Lecturer  
DeVlin, J.L., PhD ................................................................................... Tennessee  
Pendry, D.A., PhD .............................................................................. Texas (Austin)  
Qirko, H.N., PhD ................................................................................ Tennessee

Adjunct Professor  
Bogard, J.S., PhD ................................................................................ Texas (Austin)  
Dunnell, R., PhD ................................................................................ Yale  
Harrison, F.V., PhD .............................................................................. Stanford  
McCormick, W.F., MD ......................................................................... Tennessee  
Smith, F.H., PhD ................................................................................ Michigan  
Stein, J.K., PhD .................................................................................... Minnesota

Adjunct Associate Professor  
Goldberg, P., PhD ................................................................................ Michigan  
Sullivan, L.P., PhD .............................................................................. Wisconsin (Milwaukee)

Adjunct Assistant Professors  
Crites, G.D., PhD ................................................................................ Tennessee  
Dessel, J.P., PhD .................................................................................... Arizona  
Douglas, J.C., PhD .............................................................................. Houston  
Klenk, R.M., PhD ................................................................................ Washington  
Lev-Tov, J., PhD ................................................................................ Tennessee  
Polhemus, R.R., PhD ........................................................................ Tennessee  
Riggs, B.H., PhD ................................................................................ Tennessee  
Symes, S.A., PhD .............................................................................. Tennessee  
van de Moortel, A., PhD .......................................................................... Bryn Mawr

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, Knoxville, 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 Bachelor of Arts with a major in anthropology from UT Knoxville 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, 322
- 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://art.utk.edu

Paul Lee, Director
Tim Hiles, Associate Director

Professors
Brakke, M., MFA .........................................................Yale
Goldstein, M.B., MFA ................................................Nebraska
Habel, D.M., PhD ..........................................................Michigan
Lee, B., MFA .................................................................Yale
Lee, P., MFA ............................................................Cranbrook Academy of Art
Leland, W.E., MFA ......................................................Tennessee
Lyons, B., MFA ..............................................................Arizona State
Magden, N., PhD .........................................................Case Western Reserve
Riesing, T.J., MFA ........................................................Nebraska
Staples, C., MFA .......................................................Michigan State
Wilson, D., MFA ........................................................Wisconsin
Yates, S.A., MFA ....................................................North Carolina (Greensboro)

Associate Professors
Brogden, S., MFA .......New York State College of Ceramics at Alfred
Dewey, W., PhD .............................................................Indiana
Hiles, T.W., PhD ..........................................................Pennsylvania State
Neff, A.L., PhD ............................................................Pennsylvania
Jung, A., MFA ..............................................................Wisconsin

Assistant Professors
Brown, J., MFA ......................................................Rhode Island School of Design
Lough, W., MFA .............................................................Temple
Lowe, S., MGD. ..............................................................North Carolina State
Martin, F., MFA .............................................................Cranbrook
Shmerler, D., MFA ......................................................Virginia Commonwealth
Wright, S., PhD ..............................................................Stanford

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)

Those applying will be admitted into the program 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 • STUDIO ART MAJOR

The Bachelor of Fine Arts with a major 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 and Bachelor of Fine Arts) 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 three hours per week attendance for each credit hour earned. Completing the Bachelor of Fine Arts program may take more than eight semesters. Students are urged to seek departmental advisement each semester to ensure proper scheduling. Students seeking the Bachelor of Fine Arts should also consider pursuing a minor in art history.

Transfer students are advised that a minimum of 21 hours in studio courses, and six upper-division hours in art history, must be earned at the University of Tennessee, Knoxville. 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 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, Knoxville. 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, print-making, 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 ............................................................. 6
Art 295 ............................................................. 3
Art History 172* and 173* and 162* or 183* ............................................................. 9
Art History Electives ............................................................. 6

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
(Satisfactory/No Credit Grading) ............................................................. 0
Ceramics 321, 322 (prerequisite for all 400-level Ceramics courses) ............................................................. 8
Ceramics 421, 422 ............................................................. 12

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 ............................................................. 9

1Studio 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 Architecture, Art Education, Computer Science, Journalism and Electronic Media, Interior Design or Theatre ............................................................. 15

General Curriculum (consult University General Education Requirement for appropriate choices within each category)

English 101*, 102* or their equivalent ............................................................. 6
Quantitative Reasoning (2 courses)* ............................................................. 6
Natural Sciences (2 courses; at least one with laboratory)* ............................................................. 7
Social Sciences (2 courses)* ............................................................. 6
Cultures and Civilizations (2 courses)* ............................................................. 6
Communicating through Writing* ............................................................. 0-3
Communicating Orally* ............................................................. 0-3

Total 120-126

*Meets University General Education Requirement.
1Students electing an additional major in Art Education and licensure to teach in schools K-12 may apply 13 hours in undergraduate Art Education courses.

Drawing Concentration

Requirements for the Bachelor of Fine Arts • Studio Art Major • Drawing Concentration

Core

Art 101, 103 ............................................................. 6
Art 295 ............................................................. 3
Art History 172* and 173* and 162* or 183* ............................................................. 9
Art History Electives ............................................................. 6

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

Art Drawing 212 (may be repeated) ............................................................. 3
Art Drawing Portfolio Review 312 (Satisfactory/No Credit Grading) ............................................................. 0
Art Drawing 311 (for two semesters) ............................................................. 8
Art Drawing 411 (for two semesters) ............................................................. 12

Approved Concentration Electives:
9 hours from the following—Art Drawing 219/419 (maximum 6 hours); Art Painting 213, 214, 215, 216; Art Media Arts 231; Art Printmaking 262, 263 ............................................................. 9

1'Studio Electives

Additional hours in studio courses to be completed in the School of Art or 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, Computer Science, Journalism and Electronic Media, Interior Design or Theatre ............................................................. 15

General Curriculum (consult University General Education Requirement for appropriate choices within each category)

English 101*, 102* or their equivalent ............................................................. 6
Quantitative Reasoning (2 courses)* ............................................................. 6
Natural Sciences (2 courses; at least one with laboratory)* ............................................................. 7
Social Sciences (2 courses)* ............................................................. 6
Cultures and Civilizations (2 courses)* ............................................................. 6

Total 120-126

*Meets University General Education Requirement.
1Students electing an additional major in Art Education and licensure to teach in schools K-12 may apply 13 hours in undergraduate Art Education courses.

Media Arts Concentration

Requirements for the Bachelor of Fine Arts • Studio Art Major • Media Arts Concentration

Core

Art 101, 103 ............................................................. 6
Art 295 ............................................................. 3
Art History 172* and 173* and 183* or 162* ............................................................. 9
Art History Electives ............................................................. 3

One course from each of the following 5 areas:
Art Drawing, Art Painting/Watercolor, Art Ceramics, Art Sculpture, Art Printmaking ............................................................. 15

Concentration

Art Media Arts 330 (Portfolio Review)
(Prerequisite to 300- and 400-level courses)
(Satisfactory/No Credit Grading) ............................................................. 0
Art Media Arts 433 (History of Modern Art and Film) ............................................................. 3
Art Media Arts 435 (Cinematography as Art) ............................................................. 6
Art Media Arts 436 (Video Art) ............................................................. 6
Art Media Arts 331 (Photography II) or Art Media Arts 341
(Digital Photography I) ............................................................. 4
Art Media Arts 431 (Photography III) or
Art Media Arts 441 (Digital Photography II) ............................................................. 4
300- and 400-level electives in Media Arts ............................................................. 9

1'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 Architecture, Art Education, Computer Science, Journalism and Electronic Media, Interior Design or Theatre ............................................................. 12

General Curriculum (consult University General Education Requirement for appropriate choices within each category)

English 101*, 102* or their equivalent ............................................................. 6
Quantitative Reasoning (2 courses)* ............................................................. 6
Natural Sciences (2 courses; at least one with laboratory)* ............................................................. 7
Social Sciences (2 courses)* ............................................................. 6
Cultures and Civilizations (2 courses)* ............................................................. 6

Total 120-126

*Meets University General Education Requirement.
1Students electing an additional major in Art Education and licensure to teach in schools K-12 may apply 13 hours in undergraduate Art Education courses.
**Art History Electives** ................................. 6
**Art History 172* and 173* and 162* or 183*** ................................. 9
**Art 295** ................................................. 3
**Art 101, 103** ............................................. 6

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**Core Hours Credit**

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**Major • Printmaking Concentration**

**Communicating Orally** ................................. 0-3
**Communicating through Writing** ................................. 0-3

**Natural Sciences (2 courses; at least one with laboratory)** ................................. 7
**Cultures and Civilizations (2 courses)** ................................. 6
**Social Sciences (2 courses)** ................................. 6
**Quantitative Reasoning (2 courses)** ................................. 6

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**Total 120-126**

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**Painting Concentration**

**Requirements for the Bachelor of Fine Arts • Studio Art Major • Painting Concentration**

**Core**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
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<tbody>
<tr>
<td>Art 101, 103</td>
<td>.6</td>
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<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>
</tbody>
</table>

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**Concentration**

| Painting 214 (may be repeated)              | .3           |
| Art Painting Portfolio Review 314 (Satisfactory/No Credit Grading) | .0           |
| Painting 313 (for two semesters)            | .8           |
| Painting 413 (for two semesters)            | .12          |

---

**Approved Concentration Electives:**

- 9 hours from the following: Art Drawing 219/419 (maximum 6 hours); Art Painting 215, 216; Art Media Arts 231; Art Drawing 212

---

**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, Computer Science, Journalism and Electronic Media, Interior Design or Theatre.**

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**Total 120-126**

---

**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 Architecture, Art Education, Computer Science, Journalism and Electronic Media, Interior Design or Theatre.

---

**General Curriculum (consult University General Education Requirement for appropriate choices within each category)**

| English 101*, 102* or their equivalent | .6           |
| Quantitative Reasoning (2 courses)*    | .6           |
| Natural Sciences (2 courses; at least one with laboratory)* | .7           |
| Social Sciences (2 courses)*           | .6           |
| Cultures and Civilizations (2 courses)* | .6           |
| Communicating through Writing*         | .0-3         |
| Communicating Orally*                  | .0-3         |

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**Total 120-126**

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**Printmaking Concentration**

**Requirements for the Bachelor of Fine Arts • Studio Art Major • Printmaking Concentration**

**Core**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
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</thead>
<tbody>
<tr>
<td>Art 101, 103</td>
<td>.6</td>
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<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>
</tbody>
</table>

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One course from each of the following 6 areas:

- Art Ceramics, Art Drawing, Art Media Arts, Art Painting/
- Watercolor, Art Printmaking, and Art Sculpture

---

**Concentration**

**Printmaking 200-level course** ................................. .3
**Printmaking Portfolio Review 360 (Satisfactory/No Credit Grading)** ................................. .0
**Printmaking 300- and 400-level courses** ................................. .20

---

**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 Architecture, Art Education, Computer Science, Journalism and Electronic Media, Interior Design or Theatre.

---

**General Curriculum (consult University General Education Requirement for appropriate choices within each category)**

| English 101*, 102* or their equivalent | .6           |
| Quantitative Reasoning (2 courses)*    | .6           |
| Natural Sciences (2 courses; at least one with laboratory)* | .7           |
| Social Sciences (2 courses)*           | .6           |
| Cultures and Civilizations (2 courses)* | .6           |
| Communicating through Writing*         | .0-3         |
| Communicating Orally*                  | .0-3         |

---

**Total 120-126**

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**Sculpture Concentration**

**Requirements for the Bachelor of Fine Arts • Studio Art Major • Sculpture Concentration**

**Core**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
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<tr>
<td>Art 101, 103</td>
<td>.6</td>
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<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>
</tbody>
</table>

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One course from each of the following 6 areas:

- Art Ceramics, Art Drawing, Art Media Arts, Art Painting/
- Watercolor, Art Printmaking, and Art Sculpture

---

**Concentration**

**Art Sculpture 200-level course** ................................. .3
**Art Sculpture Portfolio Review 340 (Satisfactory/No Credit Grading) Prerequisite to 300- and 400-level courses** ................................. .0
**Art Sculpture 300- and 400-level courses** ................................. .20

---

**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 Architecture, Art Education, Computer Science, Journalism and Electronic Media, Interior Design or Theatre.

---

**General Curriculum (consult University General Education Requirement for appropriate choices within each category)**

| English 101*, 102* or their equivalent | .6           |
| Quantitative Reasoning (2 courses)*    | .6           |
| Natural Sciences (2 courses; at least one with laboratory)* | .7           |
| Social Sciences (2 courses)*           | .6           |
| Cultures and Civilizations (2 courses)* | .6           |
| Communicating through Writing*         | .0-3         |
| Communicating Orally*                  | .0-3         |

---

**Total 120-126**

---

*Meets University General Education Requirement.

*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.
**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>6</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>6</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

**Concentration**

<table>
<thead>
<tr>
<th>Core</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Painting 216 (may be repeated)</td>
<td>3</td>
</tr>
<tr>
<td>Art Painting Portfolio Review 316 (Satisfactory/No Credit Grading)</td>
<td>0</td>
</tr>
<tr>
<td>Art Painting 315 (for two semesters)</td>
<td>8</td>
</tr>
<tr>
<td>Art Painting 415 (for two semesters)</td>
<td>12</td>
</tr>
</tbody>
</table>

Approved Concentration Electives:
- 9 hours from the following-Art Drawing 219/419 (maximum 6 hours); Art Painting 213, 214; Art Media Arts 231; Art Drawing 212
- 9

**Italian Electives**

6 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, Computer Science, Journalism and Electronic Media, Interior Design or Theatre.

**General Curriculum (consult University General Education Requirement for appropriate choices within each category)**

<table>
<thead>
<tr>
<th>Core</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>English 101*, 102* or their equivalent</td>
<td>6</td>
</tr>
<tr>
<td>Quantitative Reasoning (2 courses)*</td>
<td>6</td>
</tr>
<tr>
<td>Natural Sciences (2 courses; at least one with laboratory)*</td>
<td>7</td>
</tr>
<tr>
<td>Social Sciences (2 courses)*</td>
<td>6</td>
</tr>
<tr>
<td>Cultures and Civilizations (2 courses)*</td>
<td>6</td>
</tr>
<tr>
<td>Communicating through Writing*</td>
<td>0-3</td>
</tr>
<tr>
<td>Communicating Orally*</td>
<td>0-3</td>
</tr>
</tbody>
</table>

**Total 120-126**

*Meets University General Education Requirement.

**Bachelor of Fine Arts • Major in Studio Art and Additional Courses in Art Education**

The School of Art recommends the Bachelor of Fine Arts for those students pursuing licensure to teach art in schools K-12. These students must also contact the College of Education, Health, and Human Sciences for further requirements. Up to 12-13 credit hours of art education courses may be used as studio electives for those pursuing the BFA and licensure to teach.

**BACHELOR OF FINE ARTS • GRAPHIC DESIGN MAJOR**

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, Knoxville, 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 degree. A minimum of 42 credit hours, 300 level or above, must be earned prior to graduation.

A minimum of 120 hours are required. Students are advised that courses in graphic design must be taken in sequence, and that successful completion of Portfolio Review (350) 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>Core</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Art 101, 103, 295</td>
<td>9</td>
</tr>
<tr>
<td>Art History 172* and 173*</td>
<td>6</td>
</tr>
<tr>
<td>Art Drawing 211</td>
<td>3</td>
</tr>
</tbody>
</table>

**Graphic Design**

<table>
<thead>
<tr>
<th>Core</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Art Graphic Design 251, 252, 351, 352, 356, 451, 452, 455 (in sequence)</td>
<td>24</td>
</tr>
<tr>
<td>Art Graphic Design 350</td>
<td>0</td>
</tr>
<tr>
<td>Portfolio Review (Satisfactory/No Credit grading)</td>
<td>8</td>
</tr>
</tbody>
</table>

**Required Design and Professional**

<table>
<thead>
<tr>
<th>Core</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Art Graphic Design 405</td>
<td>3</td>
</tr>
<tr>
<td>Art Graphic Design 459</td>
<td>3</td>
</tr>
<tr>
<td>Art Graphic Design 450</td>
<td>3</td>
</tr>
<tr>
<td>Art Graphic Design 254, 256, 259, 354, 396, 405, 453, 454, 459 (choose one)</td>
<td>3</td>
</tr>
</tbody>
</table>

**Required Studio**

<table>
<thead>
<tr>
<th>Core</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Art Drawing 212, Art Painting 213 (or 215); Art Media Arts 231</td>
<td>9</td>
</tr>
</tbody>
</table>

**Art History**

<table>
<thead>
<tr>
<th>Core</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electives (one course must be writing emphasis)</td>
<td>6</td>
</tr>
</tbody>
</table>

**Studio Electives**

Students must choose a total of 9 hours from a minimum of two categories: Art Ceramics, Art Drawing, Art Media Arts, Art Printing, Art Printmaking, Art Sculpture.

**General Curriculum (consult University General Education Requirement for appropriate choices within each category)**

<table>
<thead>
<tr>
<th>Core</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>English 101*, 102* or their equivalent</td>
<td>6</td>
</tr>
<tr>
<td>Quantitative Reasoning (2 courses)*</td>
<td>6</td>
</tr>
<tr>
<td>Natural Sciences (2 courses; at least one with laboratory)*</td>
<td>7</td>
</tr>
<tr>
<td>Social Sciences (2 courses)*</td>
<td>6</td>
</tr>
<tr>
<td>Cultures and Civilizations (2 courses)*</td>
<td>6</td>
</tr>
<tr>
<td>Arts and Sciences Non-Art Elective</td>
<td>0-3</td>
</tr>
<tr>
<td>Communicating through Writing*</td>
<td>0-3</td>
</tr>
</tbody>
</table>

**Total 120-126**

*Meets University General Education Requirement.
ART HISTORY MAJOR

Requirements for the Bachelor of Arts • Art History Major

**Prerequisites:**  
Art History 172, 173, and 162 or 183  
(or their Honors equivalents) with a grade of C or better  
**Hours**  
9

**Major:**  
Art History courses numbered 300 and above  
**Courses**  
18

Students are required to take at least one course in four of the following areas:

- **Medieval/Early Renaissance** - Art History 425, 431, 441, 451  
- **Renaissance/Baroque** - Art History 442, 452, 453, 454  
- **American** - Art History 471, 472, 473, 483  
- **19th/20th Century** - Art History 403, 472, 474, 475, 476; Art Media Arts 413  
- **Non-Western** - Art History 411, 415, 416, 419, 461, 462, 463, 464  

6 Art History elective hours or from courses in the Departments of Classics, Religious Studies, or School of Architecture in consultation with departmental advisor.

Art 481 (Museum Studies I: Museums, Purpose, and Function)  
**Hours**  
3

Art History 376 (Seminar in Art History)  
**Hours**  
3

Studio courses numbered 200 and above  
**Hours**  
Total 36

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, Museum Studies II, should be considered.

STUDIO ART MAJOR

Requirements for the Bachelor of Arts • Studio Art Major

**Prerequisites**  
Art 101, 103, 295  
**Hours**  
9

Art History 162, 172, 173, 183 (any 2 with a grade of C or better) and 3 additional hours  
**Hours**  
9

**Major**  
Studio courses numbered 200 and above, including a minimum of 15 hours in 300-400 level courses  
**Hours**  
24

Total 42

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

**Prerequisites**  
Art History 172, 173, and 162 or 183 (or their Honors equivalents) with a grade of C or better  
**Hours**  
9

**Minor**  
Art History courses numbered 200 and above  
**Hours**  
15

Total 24

Minor in Studio Art

**Prerequisites**  
Art History 101, 103, 295  
**Hours**  
9

Art History 172, 173, 162, 183 (or their Honors equivalents) (any 2, one of which must be 172 or 173)  
**Hours**  
6

**Minor**  
Studio courses which include a minimum of 8 additional upper-division hours  
**Hours**  
15

Total 30

Asian Studies

See Interdisciplinary Programs.

Astronomy

See Department of Physics and Astronomy.

Department of AUDIOLOGY AND SPEECH PATHOLOGY

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

Ilsa Schwarz, Head

**Professors**  
Asp, C., PhD ......................................................... Ohio State  
Nabelek, A., PhD ................................................. Polish Academy of Sciences  
Schwarz, I., PhD ....................................................... Oregon

**Associate Professors**  
Burchfield, S., PhD .............................................. Michigan State  
Erickson, M., PhD ................................................. Vanderbilt  
Hedrick, M., PhD ....................................................... Vanderbilt  
Swanson, L., PhD ................................................... Purdue  
Thelin, J., PhD ....................................................... Iowa

**Assistant Professors**  
Filipsen, P., PhD .................................................... Wisconsin  
Harkrader, A., PhD ................................................. Texas  
Horton-Clark, R., PhD ........................................... Wisconsin  
Munoz, M., PhD ....................................................... Texas  
Plyler, P., PhD ......................................................... Tennessee  
Saltuklaroglu, T., PhD ........................................... East Carolina  
Von Hapsburg, D., PhD ............................................ Texas

**Instructor**  
Singletary, T., MS ................................................. Colorado State

**Adjunct Faculty**  
Handel, S., PhD ..................................................... Johns Hopkins  
Lipscomb, D., PhD ................................................ Washington

**Clinical Director**  
Michael, A., PhD ..................................................... Vanderbilt

**Clinical Faculty**  
Barnes, V., MA ....................................................... Tennessee  
Beeler, J., MA ......................................................... Tennessee  
Buehler, V., MA ....................................................... Tennessee  
Campbell, J., AuD .................................................. Arizona School of Health Sciences  
Crownover, J., MA ................................................. Texas (Dallas)  
Cutler, M., PhD ......................................................... Georgia  
DeGennaro, A., MA ................................................. Case Western  
Donels, E., MA ....................................................... Tennessee  
Dungan, J., AuD ..................................................... Arizona School of Health Sciences  
Hume, S., PhD ....................................................... Tennessee  
Jenkins, P., MA ......................................................... Tennessee  
Lewis, D., MA ......................................................... Tennessee  
Mintz, B., MA ......................................................... Penn State  
Plyler, E., AuD ...................................................... Arizona School of Health Sciences
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 or Doctor of Audiology 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 or speech pathology include 300, 302, 303, 305, 306, 320, and 473.

Applicants for enrollment in clinical practice must submit an application to the departmental Clinical Director. Requirements for enrollment in practicum courses (434 for speech pathology or 445 for 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 prerequisites 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 in Audiology and Speech Pathology include at least six semester hours in behavioral and/or social sciences which pertain to the understanding of normal/abnormal behavior and at least one course in each of the following areas: biological sciences, physical sciences, and mathematics. Students majoring in both Audiology and Speech Pathology are strongly encouraged to consult with the department undergraduate advisor before selecting elective courses.

**AUDIOLOGY MAJOR**


**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.
Division of BIOLOGY
http://web.bio.utk.edu/division/

Director
O.J. Schwarz

Interim Coordinator
Brewton, R., PhD..........................................................Tennessee

Lecturer
Guffey, S., PhD............................................................Tennessee

The Division of Biology consists of the following departments: Biochemistry and Cellular and Molecular Biology (BCMB), Ecology and Evolutionary Biology (EEB), and Microbiology. Each offers a separate concentration within a common Bachelor of Science major, titled biological sciences, followed by the concentration name. (Honors options are described after each concentration.)

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 111-112 or 130; Biology 140-240-250

Progression Requirements

Students may declare a Biological Sciences Major after completing the prerequisites Chemistry 120-130, and Biology 111-112 or 130 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 Biology 111-112 or 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; 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, 457) or from the following courses in other departments: Microbiology 310-319, 410, 411, 420-429, 430, 440; 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 321, 440, 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 33 hours.

- Chemistry 350
  While not required, Chemistry 360-369 is recommended for students that plan to pursue medical professions and the following disciplines within ecology and evolutionary biology: physiological ecology, chemical ecology, environmental toxicology and molecular evolution and systematics. Chemistry 360-369 can be applied to the Ecology and Evolutionary Biology upper-division requirements and are listed under the Physiology/Chemical Ecology category below.

- Quantitative Requirement: Statistics 201 or Statistics 251 and one course from the following (note prerequisites in parentheses).
  Mathematics 231 (Prereq: Mathematics 141-142);
  Mathematics 251 (Prereq: Mathematics 141-142);
  Mathematics 405 (Prereq: Mathematics 141-142 or 151-152); Statistics 320 (Prereq: Statistics 201);
  Statistics 330 (Prereq: Statistics 201).
  Mathematics 141-142 OR 151-152 can be used to satisfy Ecology and Evolutionary Biology requirements. However, 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 categories. Evolution—Ecology and Evolutionary Biology 410, 445*, 460, 465*, 495*
  Ecology—Ecology and Evolutionary Biology 433*, 446*, 470*, 484; Microbiology 470
  Organismal Biology—Ecology and Evolutionary Biology 330, 360*, 380*, 414, 450, 459*, 461*, 474*
  Physiology/Chemical Ecology—Biochemistry and Cellular and Molecular Biology 310, 321, 415, 416*, 419*, 440; Chemistry 360, 369*; Microbiology 310, 319*
  *courses with lab or field component
- The remaining hours for the ecology and evolutionary biology concentration can include any of the remaining ecology and evolutionary biology courses on the above lists, other upper-division ecology and evolution courses, or appropriate upper-division courses offered by the following departments: Anthropology; Earth and Planetary Sciences; Forestry, Wildlife and Fisheries; Geography; Microbiology; Plant 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 Web page. 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 or field course.

**Honors Option**

Requirements for the honors option are
- fulfill all requirements for the biological sciences major—ecology and evolutionary biology concentration
- 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
- 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 401, 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 29-34 hours including
- Chemistry 350-360-369 or 350, 310-319 or 310-319 and Biochemistry and Cellular and Molecular Biology 310
- Biochemistry and Cellular and Molecular Biology 321; Ecology and Evolutionary Biology 330, 400 (1-4 hours), 410, 490 (1-2 hours); plus 9 additional hours of other upper-division courses offered by life science departments (except Biochemistry and Cellular and Molecular Biology 306, Ecology and Evolutionary Biology 304, 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
- 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
- a senior thesis that is acceptable to the student’s committee

Students interested in pursuing an honors option should contact the Division of Biology office for details.

**Department of CHEMISTRY**

http://www.chem.utk.edu

Craig E. Barnes, Interim Head

**Professors**

Adcock, J.L., PhD.................................................................Texas
Baker, D.C., PhD.................................................................Ohio State
Barnes, C.E., PhD.................................................................Stanford
Bartmess, J.E., PhD.............................................................Northwestern
Compton, R.N., PhD...........................................................Tennessee
Cook, K.D., PhD.................................................................Wisconsin
Feigl, C.S., PhD.................................................................Colorado
Guiochon, G.A. (Distinguished Scientist, Science Alliance Center of Excellence, PhD).........Université de Paris (France)
Kahalka G.W. (Robert H. Cole Professor, Alumni Distinguished Service Professor), PhD.................................Purdue
Kovac, J.D., PhD.................................................................Yale
Larose, J.Z., PhD.................................................................Wesleyan
Magid, L.J., PhD.................................................................Yale
Magid, R.M., PhD.................................................................Yale
Mays, J.W. (Distinguished Scientist, Science Alliance Center of Excellence, PhD).................................Akron
Pagni, R.M., PhD...............................................................Wisconsin
Schweitzer G.K. (Alumni Distinguished Service Professor), PhD............................................................Illinois
Sepaniak, M.J., PhD............................................................Iowa State
Williams, T.F. (Alumni Distinguished Service Professor), PhD.........................................................London (UK)
Woods, III, C., PhD...........................................................North Carolina State
Xue, Z., PhD.................................................................UCLA

**Associate Professors**

Dadman, M.D., PhD.........................................................Massachusetts
Hinde, R.J., PhD.................................................................Chicago
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. Chemistry 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

Although not reflected in the showcase, students are required to meet the University General Education Requirement as stated in this catalog. Consult the College of Arts and Sciences Advising Services for updated information.

<table>
<thead>
<tr>
<th>Freshman</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemistry 120-130 or (preferably) 128-138</td>
<td>8</td>
</tr>
<tr>
<td>Mathematics 141-142</td>
<td>8</td>
</tr>
<tr>
<td>English Composition</td>
<td>6</td>
</tr>
<tr>
<td>Foreign Language (intermediate level sequence)</td>
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<td>Mathematics 241 and either 231 or 251</td>
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<tr>
<td>Physics 135-136 or 137-138</td>
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<td>Biochemistry and Cellular and Molecular Biology 410 or 401</td>
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<tr>
<td>Chemistry Electives</td>
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</table>
Bachelor of Science

The Bachelor of Science degree is available to students who desire a more flexible program. Prerequisites to the major: Chemistry 120-130 or 128-138 and Mathematics 141-142 or 151-152. Corequisites to the major: 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 numbered above 200 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 above 200 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

The concentration in classical civilization consists of 27 hours. The required core of the major is Classics 201 plus any 9 hours drawn from the following: Classics 221-222 (3-3), Classics 232 (3), Classics 253 (3). The remaining 15 hours may be drawn from Classics 261-264, 251-252, any Classics course numbered 300 or above, History 366, or Philosophy 320. Students are encouraged to satisfy the foreign language requirement with Greek or Latin.

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, 253. The remaining 9 hours may be drawn from Classics 261-264, 251-252, any Classics course numbered 300 or above, History 366, or Philosophy 320.

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 any courses in the Classics Department (other than Classics 121-122, 150, 201, or 273).
Minor in Greek

The Greek minor consists of 18 hours including 12 hours of Greek language courses numbered above 200, and six hours chosen from Classics 221-222, 436, 442.

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 any courses in the Classics Department (other than Classics 111-112, 150, 201, or 273).

Minor in Latin

The Latin minor consists of 18 hours including 12 hours of Latin language courses numbered above 200, and six hours chosen from Classics 221-222, 436, 442.

Placement Examination

Students who transfer to the University of Tennessee, Knoxville, 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 examination. 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

Director
Christopher P. Craig, Classics

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 re-search, scholarship or creative imagination. College Scholars 498 is the appropriate course to use to receive credit for this work.

Comparative Literature
See Interdisciplinary Programs.

Department of COMPUTER SCIENCE

http://www.cs.utk.edu/

Michael W. Berry, Interim Head

Professors
Berry, M.W., PhD ................................................................. Illinois
Dongarra, J.J., PhD ............................................................... New Mexico
Langston, M.A., PhD ............................................................ Texas A&M
Poore, J.H., PhD ................................................................. Georgia Institute of Technology
Thomason, M.G., PhD ........................................................... Duke

Associate Professors
Beck, M., PhD ................................................................. Cornell
Gregor, J., PhD ................................................................. Aalborg (Denmark)
MacLennan, B.J., PhD ....................................................... Purdue
Parker, L.E., PhD ............................................................. Massachusetts Institute of Technology
Plank, J.S., PhD ................................................................. Princeton
Vose, M.D., PhD ............................................................... Texas

Assistant Professors
Huang, J., PhD ................................................................. Ohio State
Straight, D.W., PhD ........................................................... Texas

Lecturer
Mayo, J.W., MS ................................................................. Tennessee

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

Undergraduates are required to apply to the Department of Computer Science for progression into the computer science major. Progression is based on demonstrated academic ability. The overall record will be evaluated for quality and seriousness of purpose.

The requirements are subject to change. Current requirements can be determined by consulting an advisor in the Undergraduate Programs Office or by contacting the Computer Science Department. Students are expected to apply during the semester in which they are completing the last of Computer Science 140, 160, and Mathematics 141.

Recent Progression Standards

Students who have met the following criteria have been approved for progression into the major.

• Has completed Computer Science 140, 160, and Mathematics 141 at the University of Tennessee, Knoxville, with a GPA of 3.0 or better in these three courses and a grade of C or better in each course. Transfer students’ course work will be evaluated individually.

• Has a GPA of 2.5 or better in all computer science courses taken at the University of Tennessee, Knoxville, that apply to the major.

• Has not been disciplined for academic dishonesty in a computer science course or for abuse of university computing privileges.

• Has no excessive absences, withdrawals, or incompletes.

Students who meet the criteria must fill out an application available in the Computer Science Department. A student who does not meet progression requirements will not be allowed to take any upper-division computer science course that can be applied to the major.
Transfers from Other Programs at the University of Tennessee, Knoxville

Students in other colleges or majors at the University of Tennessee, Knoxville, 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, Knoxville, 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, Knoxville, 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

Majors in computer science should prepare their programs in consultation with an advisor in the Computer Science Department. A student is not permitted to declare a computer science major until the department's progression requirements have been met.

The major in computer science consists of 39 hours. Prerequisites to the major include Computer Science 102, 140, 160, and Mathematics 141, 142, 241, 251, with a grade of C or better in each course; and a two-semester laboratory science (Physics 135-136 or biology or chemistry). The major consists of

- Computer Science 302, 311, 360, 365, 380
- either Computer Science 340 or Computer Science 370
- Mathematics 300
- either English 355 or English 360
- either (i) an additional 15 hours of upper division computer science or (ii) an additional 12 hours of upper-division computer science and either mathematics 231 or 323

Minor in Computer Science

The prerequisites to an undergraduate minor are Computer Science 140, 160, and Mathematics 141 with a GPA of 3.0 or better in the three courses. The minor is 15 hours of upper-division computer science courses. A grade of C or better is required in all computer science courses applied to the minor, and a GPA not less than 2.5 must be maintained in these courses.

Department of EARTH AND PLANETARY SCIENCES

http://geoweb.gg.utk.edu/

Claudia I. Mora, Head

Professors

- Dunne, W.M. (Associate Dean), PhD ...........................................Bristol
- Hatcher, R.T. (UT Knoxville/ORNL Distinguished Scientist), PhD ................................................Tennessee
- Labotka, T.C., PhD..........................................................California Institute of Technology
- McKay, L.D., PhD ..............................................................Waterloo
- McKinney, M.L., PhD ..........................................................Yale
- McSween, H.Y. (Distinguished Professor of Science), PhD ...........................................................Harvard
- Misra, K.C., PhD ..............................................................Western Ontario
- Mora, C.I. (Carden Professor), PhD...................................................Wisconsin
- Taylor, L.A., PhD ..............................................................Lehigh

Associate Professor

- Clark, G.M., PhD ..........................................................Pennsylvania State

Assistant Professors

- Kah, L.C., PhD .............................................................Harvard
- Moersch, J.E., PhD ..........................................................Cornell
- Uhle, M., PhD .................................................................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

Progression to the Major

To progress into the major, students must take two courses from Geology 101-102-103, as well as Chemistry 120-130. Chemistry 130 may be taken concurrently with 300-level geology courses.

Corequisite Requirements

Corequisite requirements include Mathematics 141-142, and 3 courses from Biology 130-140 and Physics 135-136.

Major Requirements

Upper-division requirements include Geology 310-320-330-340-370-380 (24 hours), a minimum of five hours of an approved field camp, and nine elective hours at the 400-level or above. We encourage students to participate in undergraduate research (Geology 493). A maximum of three hours of Geology 493 may count toward the major.

Honors Concentration

Students with five completed upper-division geology courses and a cumulative GPA of at least 3.0 are encouraged to pursue an honors concentration, which includes completion of 3 hours of Geology 491, 492, or 493 beyond the normal major requirements, approval of a written thesis, and oral presentation of thesis results. A GPA of at least 3.0 must be maintained throughout matriculation. Interested students should consult their academic advisor for details.
Minor in Geology

A minor in geology consists of two courses from Geology 101-102-103, and an additional 16 hours at the 200-level or above. A maximum of six hours at the 200-level and three hours of Geology 493 may be counted toward the minor.

Department of ECOLOGY AND EVOLUTIONARY BIOLOGY

http://eob.bio.utk.edu/

Christine R.B. Boake, Head
Arthur C. Echternacht, Associate Head

Professors
Boake, C.R.B., PhD..........................................................Cornell
Burghardt, G.M., PhD.......................................................Chicago
Echternacht, A.C., PhD...................................................Kansas
Etier, D.A., PhD.............................................................Minnesota
Gavrilites, S., PhD.........................................................Moscow State
Greenberg, N.B., PhD.....................................................Rutgers
Gross, L.J., PhD..............................................................Cornell
Harris, III, W.R., PhD.....................................................Texas
Hallam, T.G., PhD..........................................................Missouri
Hughes, K., PhD ............................................................Utah
McCracken, G.R., PhD.....................................................Indiana
Petersen, R. (Distinguished Professor), PhD..........................Columbia
Riechert, S.E. (Distinguished Service Professor), PhD.............Wisconsin
Saylor, G.S., PhD.............................................................Idaho
Schilling, E., PhD.............................................................Cornell
Schultz, E., PhD.............................................................Indiana
Simberloff, D. (Gore Hunger Chair of Excellence), PhD............Harvard

Associate Professors
Drake, J.A., PhD..............................................................Purdue
Small, R., PhD...............................................................Iowa State
Smith, D., PhD...............................................................Tennessee
Weltzin, J., PhD..............................................................Arizona
Wofford, B.E. (Curator of Herbarium), PhD..........................Tennessee

Assistant Professors
Butler, M., PhD..............................................................Washington (St. Louis)
Fordyce, J.A., PhD..........................................................Davis
Gilechrist, M.A., PhD.......................................................Duke
King, A.A., PhD.............................................................Arizona
Near, T.J., PhD...............................................................Illinois
Sanders, N.J., PhD.........................................................Stanford
Williams, J., PhD..........................................................Georgia

Research Professors
Cooper, L.W., PhD.........................................................Alaska
Grebmeyer, J.M., PhD.....................................................Alaska

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 are 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/

John Zomchick, Head

Professors
Atwill, J.M., PhD.........................................................Purdue
Carroll, D.A. (J. Douglas Bruce Professor), PhD..................North Carolina
Cox, D.R. (Associate Dean), PhD...................................Missouri
Dumas, B.K., PhD.......................................................Arkansas
Dunn, A.R., PhD..........................................................Washington
Ensor, A.R., PhD.........................................................Indiana
FINNEGAN, R. J. (John C. Hodges Professor), PhD ................. North Carolina
Garner, J.R., S.B. (Young Professor), PhD ......................... Princeton
Goslee, D.F., PhD ................................................................. Yale
Goslee, N.M. (Alumni Distinguished and Young Professor), PhD ..... Yale
Hackett, T.J.A. (Curry Professor), PhD ....................... Cambridge
Kallet, M. (John C. Hodges Teaching Professor), PhD ............ Rutgers
Keene, M.L., PhD ................................................................. Texas
Kelly, R.M. (Young Professor), PhD .................. Duke
Leggett, B.J. ( Humanities Professor), PhD ............... Florida
Lek, I., PhD ................................................................. Illinois
Liuzza, R.M., PhD ............................................................... Yale
Lofaro, M.A., PhD ............................................................. Maryland
Luprecht, M.A., PhD ......................................................... Florida
Maland, C., PhD ................................................................. Michigan
Pape, M.E., PhD ................................................................. McGill
Smith, A., PhD ................................................................. Houston
Stillman, R.E., PhD ......................................................... Pennsylvania
Wier, A., MFA ................................................................. Bowling Green
Zomchick, J.P., PhD ......................................................... Columbia

**Associate Professors**

Anderson, M.G, PhD .............................................. Vanderbilt
Elia, A.J., PhD .............................................................. Penn State
Hirst, R., PhD ........................................................ Rensselaer Polytechnic
Howes, L.L., PhD ......................................................... Columbia
Jennings, L.D., PhD ................................................... North Carolina
Knight, M., MFA .............................................................. Virginia
Reiff, M.J., PhD .......................................................... Kansas

**Assistant Professors**

Abraham, M., PhD .................................................... Purdue
Billone, A.C., PhD ........................................................ Princeton
Coleman, D.D., PhD ................................................... Stanford
Fishman, J.M., PhD .................................................... Stanford
Haddox, T.F., PhD ...................................................... Vanderbilt
Hirschfeld, H.A., PhD ................................................. Duke
Ikard, D., PhD ............................................................ Wisconsin
Schoenbach, L.M., PhD .............................................. Virginia
Seshagiri, U., PhD ....................................................... Illinois
Thaggert, M., PhD ...................................................... California (Berkeley)

**Lecturers**

Aja, M.P., PhD ............................................................ Alabama
Barrow, R., PhD .............................................................. Iowa
Burton, J.C., PhD ................................................ State University of New York (Stony Brook)
Capps, S.E., PhD ........................................................ Tennessee
Christie, P.P., PhD ........................................................ Tennessee
Dziuban, E.K., MA ........................................................ Tennessee
Forsythe, M.L., MA ...................................................... Tennessee
Hardigw, M.R., PhD ..................................................... Tennessee
Hardwic, W.J., PhD ...................................................... Florida
Harris, S.C., PhD .......................................................... Tennessee
Havens, K.L., PhD ....................................................... Tennessee
Heusen, A., PhD .......................................................... Tennessee
Hyman, K., PhD .......................................................... Illinois (Chicago)
Knox, L., MA .............................................................. Indiana
Kriete, L.M., PhD ......................................................... Washington (St. Louis)
Larsen, W.B., PhD ........................................................ Tennessee
McCue, K., MA ............................................................ Tennessee
McDowell, M.R., MA .................................................. Tennessee
McKinstry, D.K., PhD ............................................... Tennessee
Melton-Summer, S.E., PhD ...................................... Tennessee
Meredith, E.G., MA ..................................................... Tennessee
Morgan, T., PhD ......................................................... State University of New York (Buffalo)
Palmer, H.M., MA ........................................................ Tennessee
Pearson, F.M., MA ........................................................ Tennessee
Peavler, J.L., MA ........................................................ Tennessee
Preston, N.H., PhD ........................................................ Tennessee
Renfroe, M.M., PhD ..................................................... Tennessee
Robertson, K.C., MA ................................................... Tennessee
Senasi, D.M., PhD ........................................................ Alabama
Sheffield, C.L., MA ....................................................... Radford
Slawinski, S., PhD ........................................................ South Carolina
Spirko, R.L., PhD ......................................................... North Carolina
Stafford, A.A., PhD ..................................................... Pittsburgh
Wilhelm, R., PhD ........................................................ Tennessee
Yost, R., M.A. .............................................................. Tennessee

**Permanent Part-Time Lecturer**

Bryan, L.C., MA ............................................................ Tennessee

**Writing Center Director**

Benson, K.F., EdD ....................................................... 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**

The concentration requires 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**

The concentration consists of 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

The concentration requires 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

The concentration consists of 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.

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/

Bruce A. Ralston, Head

Professors
Aiken, C.S., PhD..................................................Georgia
Bell, T.L., PhD....................................................Iowa
Foresta, R.A., PhD................................................Rutgers
Harden, C.P., PhD............................................Colorado (Boulder)
Horn, S.P., PhD................................................California (Berkeley)
Pulsipher, L.M., PhD..................................Southern Illinois
Ralston, B.A., PhD...........................................Northwestern
Rehder, J.B., PhD..............................................Louisiana State
Shaw, S.L., PhD..............................................Ohio State

Associate Professor
Orvis, K., PhD..................................................California (Berkeley)

Assistant Professors
Drever, A., PhD.................................................California (Los Angeles)
Grissino-Mayer, H., PhD.................................Arizona

Adjunct Faculty
Blainge, T.J., PhD..............................................Wisconsin
Brown, M.A., PhD............................................Ohio State
Griposhaver, M.M., PhD................................Tennessee
Harrison, G., PhD.............................................Tennessee
Liu, C., PhD....................................................Tennessee
McKeeown, R., PhD........................................Oregon
Tankersley, R.D., PhD................................Tennessee
Washington-Allen, R., PhD............................Utah State
Wilbanks, T.J., PhD........................................Syracuse

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, and 101 or 102, 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 nine additional credits, at least six of which must be taken at the 400 level. No more than three 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. Students who enter the major with more than 60
hours of credit, and who have met the social science divisional requirements in departments other than geography, may petition the department to substitute certain upper division human geography courses for 101 or 102.

**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/

Todd A. Diacon, Head

**Professors**

Ash, S.V., PhD .................................................................Tennessee
Bohstedt, J., PhD .............................................................Harvard
Brummett, P., PhD .............................................................Chicago
Crabtree, L. (Chancellor), PhD ................................................Minnesota
Cutler, W., PhD .................................................................Texas
Diacon, T.A., PhD .............................................................Wisconsin
Feller, D., PhD .................................................................Wisconsin
Mayhew, A. (Vice-Chancellor), PhD ........................................Texas
Norrell, R.J. (Bernadette Schmitt Professor), PhD .................Virginia

**Associate Professors**

Appier, J., PhD .................................................................California (Riverside)
Bast, R.J., PhD .................................................................Arizona
Burnman, T.E., PhD .......................................................Toronto
Fleming, C.G., PhD ..........................................................Duke
Freeberg, E., PhD .............................................................Emory
Glover, L., PhD .................................................................Kentucky
Higgs, C.A., PhD .............................................................Yale
Lulevichus, VG, PhD ............................................................Pennsylvania
Piehler, G.K., PhD ............................................................Rutgers

**Assistant Professors**

Dessel, J.P., PhD .............................................................Arizona
DeWeerdt, H., PhD .............................................................Harvard
Kulikowski, M., PhD .......................................................Toronto
Liu, L., PhD .................................................................California (San Diego)
Phillips, D., PhD .............................................................Harvard
Sacco, L., PhD .................................................................Southern California
White, G, PhD .................................................................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

- six 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. The honors concentration requires successful completion of 307 and a senior thesis (407-408) with a grade of B or above. 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 six hours in United States history and nine upper-division hours.

**INTERDISCIPLINARY PROGRAMS**

Don Richard Cox, Associate Dean, College of Arts and Sciences, Director

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, global 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**

Wornie Reed, Sociology, Chair

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 six hours in African and African-American Studies 492 and 493 combined can be applied toward the African and African-American studies concentration. In planning their program, majors must include courses from at least two other departments which cross-list 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 nine of which must be upper-division credits. A maximum of three 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 cross-list 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**

Michael Fitzgerald, Political Science, Chair

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 three 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 three to six 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**

Miriam L. Levering, Religious Studies, Chair

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 from courses listed within one of the four geographical-cultural areas (Islamic World; South Asia; China; Japan), and six of those 12 hours must come from Subdivision A and six 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.

**Minor in Cinema Studies**

Christine Holmlund, Modern Foreign Languages and Literatures, Chair

The cinema studies minor consists of 15 hours, including Cinema Studies 281; 3 hours chosen from Cinema Studies 235, 236, or Journalism and Electronic Media 335; and 9 additional hours from any courses in cinema studies, courses cross-listed with cinema studies, or from the following list of approved courses: Journalism and Electronic Media 275, 335, 435. 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**

Carolyn R. Hodges, Modern Foreign Languages and Literatures, Chair

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 nine hours of literature in a foreign language in courses numbered 300 or above. The remaining nine 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, six hours of literature in a foreign language in courses numbered 300 or above, and six hours of literature courses numbered 300 or above in a different department. These six 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

Michael McKinney, Earth and Planetary Sciences, Chair

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 are: Biology 130-140 or 111-112; 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: (a) 15 hours from Geography 345, Sociology 360 or 464 or 465 (one only), Philosophy 246, Economics 462 or Agricultural Economics 470 (one only), Agriculture and Natural Resources 333, Journalism and Electronic Media 451, Geology 490; (b) 3 hours from Geology 455 or Ecology and Evolutionary Biology 484; (c) 3 hours from Geography 334, Geography 434, Environmental and Soil Sciences 462, Geography 433, or Geography 436.

• The specialty consists of 12 hours at the 300 level or above in one of the following departments: Biochemistry; Cellular and Molecular Biology; Chemistry; Earth and Planetary Sciences; Ecology and Evolutionary Biology; Economics; Environmental and Soil Sciences; Forestry, Wildlife and Fisheries; Geography; Plant Sciences; Political Science; or Sociology.

Interdisciplinary Programs Major • Global Studies Concentration

Jon Shefner, Sociology, Chair

The global studies concentration focuses on understanding connections between different parts of the world. Globalization, or the trans-national exchange of investments, commodities, people, politics, technologies, and cultures, is both a characteristic of the contemporary world and the culmination of large-scale, long-term social change. Although globalization, at times, seems dominated by new economic and political formations more powerful than the traditional nation-state, it has also mobilized new expressions of local and transnational discontent and resistance.

The University of Tennessee, Knoxville, global studies curriculum helps students understand the implications of global change, allowing the university community to confront what is occurring in our immediate locale by examining what is going on elsewhere. Bringing together faculty and students from diverse perspectives creates an interdisciplinary understanding of the disruption and integration resulting from changing configurations of nations, global processes, and identities.

Global Studies 250 is a prerequisite to the concentration which requires 30 credit hours in the form of 10 courses. No course may be counted toward more than one of the following categories. No more than three credit hours may be taken under the 300 level. Courses are to be distributed as follows.

• Seven core courses from the following list. A student may choose to concentrate in either global society and culture or global politics and economy. The requirements for either track will be five courses in the primary track and two courses in the secondary track.

  Track I – Global Society and Culture
  Anthropology 315, History 421; Comparative Literature 202, 203; English 331, 454; Geography 345; Music History 290; and Religious Studies 302, 333

  Track II – Global Politics and Economy
  Agricultural Economics 420; Economics 321, 323; Forestry, Wildlife, and Fisheries 420; Geography 351; History 374; Political Science 350, 365, 470, 471, 472; Retail and Consumer Sciences 421; and Sociology 442, 446

• Any two courses from the following approved list of regional studies courses
  Anthropology 313, 316, 319; Asian Studies 471; Geography 372, 373; Political Science 452, 456; Religious Studies 332, 373; Spanish 331, 401, 465

• One upper-division course from the following list
  Anthropology 410, 431; Geography 320, 340, 415; Philosophy 360; Political Science 401; Religious Studies 300; Sociology 331; any upper-division modern foreign language course taught in the language of study

Note: Any courses taken to fulfill a core requirement cannot be used to fulfill a regional studies or methods/foreign language requirement.
Minor in Global Studies

Global Studies 250 is a prerequisite to the minor in global studies which requires 18 credit hours distributed in the following manner:

Six courses, including two courses from Track I (global society and culture) and two courses from Track II (global politics and economy). The remaining two courses may be taken from any of the above lists.

Interdisciplinary Programs Major • Judaic Studies Concentration

Gilya Gerda Schmidt, Religious Studies, Chair

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:
- Religious Studies 381, History 383
- 12 hours from: Religious Studies 311, 312, 320, 385, 386, 405, History 370, 384
- nine 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 concentration.

Minor in Judaic Studies

The Judaic studies minor consists of Religious Studies 381, History 383, and 9 hours selected from the Judaic studies concentration.

Interdisciplinary Programs Major • Language and World Business-Chinese, Japanese, or Portuguese Concentration

Gregory B. Kaplan, Modern Foreign Languages and Literatures, Chair

For a complete list of requirements, see Department of Modern Foreign Languages and Literatures.

Interdisciplinary Programs Major • Latin American Studies Concentration

Michael Handelsman, Modern Foreign Languages and Literatures, Chair

The concentration consists of two optional tracks: general studies or Brazilian studies.

The general studies track requires 27 upper-division hours taken from courses offered by at least three different academic departments; three of the hours are to be selected from either Spanish 331, 333, 334, or Portuguese 315, 316; the remaining hours are to be chosen from Anthropology 313, 316, 319; Cinema Studies 465; History 360, 361, 460, 461, 462, 463, 475; Geography 372, 373; Political Science 456; Portuguese 431, 432; Spanish 401, 402, 479.

The Brazilian studies track requires 27 upper-division hours offered by at least three different academic departments; of these hours, a minimum of six hours must be taken as part of UT Knoxville’s summer study program in Fortaleza, Brazil (Portuguese 491 or 493); nine hours must come from University of Tennessee, Knoxville, courses that focus on Brazil (History 460; Portuguese 315, 316, 431, 432). The remaining 12 hours are to be selected from courses listed above as part of the general studies track.

Minor in Latin American Studies

The minor consists of 18 hours taken from courses offered by at least three different academic departments; three of the hours are to be selected from either Spanish 331, 333, 334, or Portuguese 315, 316; the remaining 15 hours are to be selected from the courses listed in either track of the concentration.

Interdisciplinary Programs Major • Legal Studies Concentration

John Scheb, Political Science, Chair

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. 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—three hours from English 496, Political Science 401, Sociology 331
- Processes—six hours from Business Law 301; Political Science 341, 430, 435, 442, 445, Sociology 451
- Perspectives—three hours from English 490, Political Science 330, Philosophy 392, Sociology 455 (Note: Students who select Sociology 455 as their core course may not use it toward the Perspectives category. The same rule applies to Political Science 330.)
• Historical and Global Dynamics—three hours from Classics 362, Philosophy 393, Political Science 470
• Issues—6 hours from Journalism and Electronic Media 400, Political Science 431, Communication Studies 469, Women’s Studies 340

The remaining three hours are to be chosen from one of the five categories.

**Interdisciplinary Programs Major • Linguistics Concentration**

Ilona Leki, English, Chair

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.

**Corequisites**

• Completion of a third year of Indo-European 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**

21 hours composed of

• Audiology and Speech Pathology 305, English 371, 372, 471, Linguistics 423, 425, 426

• Nine hours of the following, selected in consultation with a linguistics advisor from Anthropology 411; Audiology and Speech Pathology 302, 320; Communication Studies 300, 320; Foreign Language/ESL Education 455; French 421, 422; Linguistics 321, 400, 429, 431, 435, 436, 472, 474, 475, 476, 477, 485, 490, 491, 492, 493; Philosophy 472; Psychology 400, 424; Spanish 421, 422; Theatre 326

**Minor in Linguistics**

A minor in linguistics shall consist of 18 credit hours composed of

• Either English 471 or three 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 321, 400, 429, 431, 435, 436, 472, 474, 475, 476, 477, 485, 490, 491, 492, 493; Philosophy 472; Psychology 400, 424; Spanish 421, 422; Theatre 326

**Interdisciplinary Programs Major • Medieval Studies Concentration**

Robert Bast, History, Chair

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.

The concentration 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 communication studies 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, 313, 330, 334, 369, 474; Philosophy 322; Political Science 475

**Category 2—Language and Literature**

Classics 435; English 371 401; 402; French 410; Italian 401, 402

**Category 3—The Arts**

Architecture 415; Art History 425, 431, 441, 451; Musicology 210

**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 • Urban Studies Concentration
Bruce Tonn, Political Science, Chair

Urban studies involves the interdisciplinary study of cities and their regions. Faculty from architecture, geography, history, political science, sociology, history, business participate in the program which has variable emphases from the relationship of the individual to the environment, the process of problem solving in an urban context, or the nature of current urban issues.

Prerequisites to the program are Economics 201 or 207, Political Science 101 or 102 or 107, and Sociology 110 or 120. Courses required for the concentration are Urban Studies 250, 350 and 460, plus three hours from each of the following groups

• **Group 1** —History and Theory: Economics 361, Urban Studies 411, 441
• **Group 2** —Physical Issues and Design: Architecture 420, Urban Studies 442, 464
• **Group 3** —Planning and Policy: Political Science 446, Urban Studies 321, 412

To complete the 30 hours required for the concentration, an additional 12 hours should be completed from any of the three groups or from the following list of approved courses: African and African-American Studies 480; Architecture 420, 403, 404; Classics 436; Economics 323, 462, 471, 472; Finance 485; Geography 310, 411, 412, 449; Political Science 340; Sociology 340, 343, 344, 345, 360, 442, 462; Communication Studies 420; Statistics 201; Urban Studies 200, 450, 485, 493.

Minor in Urban Studies

A minor in urban studies consists of 18 semester hours, including Urban Studies 250 and 350, plus additional semester hours from Group 1, 2, or 3 above. For more information, contact the chairperson of Urban Studies.

Interdisciplinary Programs Major • Women’s Studies Concentration
Cheryl Brown Travis, Psychology, Chair

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. 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/

Robert J. Daverman, Interim Head

Professors
Alexiades, V., PhD.................................Delaware
Anderson, D.F., PhD..............................Chicago
Conway, J.B., PhD.................................Louisiana State
Daverman, R.J., PhD..............................Wisconsin
Dobbs, D.E., PhD.................................Cornell
Dyadak, J., PhD....................................Warsaw (Poland)
Feng, X., PhD.................................Purdue
Gavrilits, S., PhD..............................Moscow State
Gross, I., PhD....................................Cornell
Hallam, T.G., PhD.................................Missouri
Hinton, D.B., PhD..............................Tennessee
Jordan, G.S., PhD.................................Wisconsin
Karakashian, O., PhD..........................Harvard
Lenhart, S., PhD.................................Kentucky
Mulay, S., PhD.................................Purdue
Plaut, C.P., PhD.................................Maryland
Rajput, B.S., PhD.................................Illinois
Richter, S., PhD.................................Michigan
Rosinski, J., PhD.................................Wroclaw University
Schaefer, P.W., PhD............................Maryland
Simpson, H., PhD...............................California Institute of Technology
Soni, R.P., PhD.................................Oregon State
Stephenson, K.R., PhD..........................Wisconsin
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 Computer Science 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, 490 and 497) satisfying the following conditions.

- At least one course must be taken from each of the following categories: Algebra: 351, 455-456 (457-458); Analysis: 341, 445-446 (447-448); Numerical Analysis: 371 or Computer Science 370, 471-472; Probability and Statistics: 323, 423-424 (423-425)
- 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 mathematics electives in part (2).

There are many careers one can pursue with a mathematics major. Sample programs for four different goals are listed below. Additional information is available in the Department of Mathematics office.

## INDUSTRIAL EMPLOYMENT

### Freshman

| Mathematics 141-142 (or 147-148) and 171 | 11 |
| English Composition | 6 |
| Foreign Language | 6 |
| Lab Science Distribution Requirement | 8 |

### Sophomore

| Mathematics 231, 241 (or 247), 251 (or 257), and 300 | 13 |
| Non-U.S. History Distribution Requirement | 6 |
| Social Science Distribution Requirement | 3 |
| Foreign Language (completion of secondary level) | 3 |
| Science Distribution Requirement | 3 |
| Elective | 3 |

### Junior

| Mathematics 351, 431 (or 435), 341, 371 | 12 |
| Humanities Distribution Requirement | 6 |
| Social Science Distribution Requirement | 3 |
| Electives | 12 |

### Senior

| Mathematics 471-472, 423, 475 | 12 |
| Upper-Level Distribution Requirement | 6 |
| Oral Communication Requirement | 3-4 |
| Electives | 4-6 |

Total 120 minimum

## PREPARATION FOR GRADUATE SCHOOL

| Mathematics 141-142 (or 147-148) and 171 | 11 |
| English Composition | 6 |
| Foreign Language (beginning level, preferably French, German, or Russian) | 6 |
| Lab Science Distribution Requirement | 8 |
### Sophomore

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<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
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<tbody>
<tr>
<td>Mathematics 231, 247, 257, and 300</td>
<td>13</td>
</tr>
<tr>
<td>Non-U.S. History Distribution Requirement</td>
<td>6</td>
</tr>
<tr>
<td>Social Science Distribution Requirement</td>
<td>3</td>
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<tr>
<td>Foreign Language (completion of secondary level)</td>
<td>3</td>
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<tr>
<td>Science Distribution Requirement</td>
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<tr>
<td>Elective</td>
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### Junior

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<th>Course</th>
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</thead>
<tbody>
<tr>
<td>Upper-Division Mathematics Courses</td>
<td>12</td>
</tr>
<tr>
<td>Humanities Distribution Requirement</td>
<td>6</td>
</tr>
<tr>
<td>Social Science Distribution Requirement</td>
<td>3</td>
</tr>
<tr>
<td>Electives</td>
<td>12</td>
</tr>
</tbody>
</table>

### Senior

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upper-Division Math Sequence (possibly Honors)</td>
<td>6</td>
</tr>
<tr>
<td>Honors Upper-Division Math Sequence</td>
<td>6</td>
</tr>
<tr>
<td>Upper-Level Distribution Requirement</td>
<td>6</td>
</tr>
<tr>
<td>Oral Communication Requirement</td>
<td>1-3</td>
</tr>
<tr>
<td>Electives</td>
<td>4-6</td>
</tr>
</tbody>
</table>

Total 120 minimum

### SECONDARY EDUCATION

#### Freshman Hours Credit

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mathematics 141-142 (or 147-148) and 171</td>
<td>11</td>
</tr>
<tr>
<td>English Composition</td>
<td>6</td>
</tr>
<tr>
<td>Foreign Language</td>
<td>6</td>
</tr>
<tr>
<td>Lab Science Distribution Requirement</td>
<td>8</td>
</tr>
</tbody>
</table>

#### Sophomore Hours Credit

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mathematics 231, 241 (or 247), 251 (or 257), and 300</td>
<td>13</td>
</tr>
<tr>
<td>Non-U.S. History Distribution Requirement</td>
<td>6</td>
</tr>
<tr>
<td>Social Science Distribution Requirement</td>
<td>3</td>
</tr>
<tr>
<td>Foreign Language (completion of secondary level)</td>
<td>3</td>
</tr>
<tr>
<td>Science Distribution Requirement</td>
<td>3</td>
</tr>
<tr>
<td>Elective</td>
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#### Junior Hours Credit

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mathematics 323, 351, 341, 371, 400</td>
<td>15</td>
</tr>
<tr>
<td>Humanities Distribution Requirement</td>
<td>6</td>
</tr>
<tr>
<td>Social Sciences Distribution Requirement</td>
<td>3</td>
</tr>
<tr>
<td>Educational Psychology 210</td>
<td>3</td>
</tr>
</tbody>
</table>

#### Senior Hours Credit

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mathematics 445-446, 460, 421 (or 411, 431)</td>
<td>12</td>
</tr>
<tr>
<td>Upper-Level Distribution Requirement</td>
<td>6</td>
</tr>
<tr>
<td>Cultural Studies in Education 400</td>
<td>2</td>
</tr>
<tr>
<td>Oral Communication Requirement</td>
<td>1-3</td>
</tr>
<tr>
<td>Educational Psychology 401</td>
<td>2</td>
</tr>
<tr>
<td>Special Education 402</td>
<td>2</td>
</tr>
<tr>
<td>Theory and Practice in Teacher Education 352 (1), 335 (3)</td>
<td>4</td>
</tr>
<tr>
<td>Instructional Technology 486</td>
<td>3</td>
</tr>
</tbody>
</table>

Total 120 minimum

### 5TH YEAR MASTER OF SCIENCE IN MATHEMATICS

Students may earn a Bachelor of Science and a Master of Science in mathematics in five years as follows. (See the [Graduate Catalog](#) for more information on the Master of Science degree.) Please note that admission as a graduate student must be obtained prior to the beginning of the fifth year.

- Complete a total of 129 hours, including 99 hours of undergraduate credit prior to the senior year and no more than 15 hours per semester in the senior year.
- Do not complete the requirements for an undergraduate degree prior to the end of the senior year (for example, postpone one upper-level distribution requirement until the last semester of the senior year).
- Complete an additional 9 hours of 400 or 500-level mathematics courses for graduate credit by submitting a “Senior Requesting Graduate Credit” form and obtaining Senior Privilege through the Office of Graduate Student Services (requires a 3.0 cumulative GPA). These courses must be taken in the senior year and may not be used to fulfill any requirements for the undergraduate mathematics major.
- In the fifth year, complete 9 hours per semester of graduate courses fulfilling the requirements for a Master of Science degree, including two graduate sequences and Master of Science project.
- Complete 3 graduate hours during the summer preceding or following the fifth year.

The Mathematics Department awards graduate assistantships each year. The assistantship pays graduate tuition, as well as a stipend for living expenses. Students who fill all requirements of the mathematics honors program will be given priority for a graduate teaching assistantship from the UT Mathematics Department beginning in the academic year following award of the Bachelor of Science degree.

### ACCELERATED/5TH YEAR MASTER OF SCIENCE

#### Freshman Hours Credit

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mathematics 147-148 and 300</td>
<td>11</td>
</tr>
<tr>
<td>English Composition</td>
<td>6</td>
</tr>
<tr>
<td>Foreign Language (preferably French, German, or Russian)</td>
<td>6</td>
</tr>
<tr>
<td>Lab Science Distribution Requirement</td>
<td>8</td>
</tr>
</tbody>
</table>

#### Sophomore Hours Credit

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mathematics 171, 231, 247, 257</td>
<td>12</td>
</tr>
<tr>
<td>Upper-Division Mathematics Courses</td>
<td>9</td>
</tr>
<tr>
<td>Non-U.S. History Distribution Requirement</td>
<td>6</td>
</tr>
<tr>
<td>Foreign Language</td>
<td>3</td>
</tr>
<tr>
<td>Social Science Distribution Requirement</td>
<td>3</td>
</tr>
</tbody>
</table>

#### Junior Hours Credit

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upper-Division Math Sequence (possibly honors)</td>
<td>6</td>
</tr>
<tr>
<td>Honors Upper-Division or Graduate Math Sequence</td>
<td>6</td>
</tr>
<tr>
<td>Social Science Distribution Requirement</td>
<td>3</td>
</tr>
</tbody>
</table>

#### Senior Hours Credit

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upper-Division Honors or Graduate Math Sequences</td>
<td>12</td>
</tr>
<tr>
<td>Upper-Level Distribution Requirement</td>
<td>3</td>
</tr>
<tr>
<td>Oral Communication Requirement</td>
<td>1-3</td>
</tr>
</tbody>
</table>

Total 120 minimum

### Honors Program

The Mathematics Department Honors Program offers highly talented students an accelerated curricular path that permits them to enroll in graduate-level mathematics courses as early as the junior year, making them highly competitive for graduate fellowships upon completion of a Bachelor of Science degree. In addition to a more rapid curriculum, the honors program offers enhanced academic advising and opportunities for students to interact with their peers through
the Undergraduate Honors Seminar (Mathematics 497), in which honors students will discuss their theses and other undergraduate research projects.

Students who are interested in participating in the departmental honors program are urged to enroll in Mathematics 300 as soon as possible. Students who have completed Mathematics 300 may apply to the mathematics undergraduate office for admission into the program, no later than the end of the junior year. Admission is based on recommendation of two University of Tennessee, Knoxville, mathematics faculty, including the student’s teacher in Mathematics 300 or an upper-division mathematics honors course. Students are normally expected to be in the top 20% among Mathematics 300 students to be admitted to the honors program. Those who are not admitted based on performance in Mathematics 300 but who do exceptionally well in an upper-division mathematics honors course may also be admitted. Membership in the University Honors Program is not required, nor does such membership guarantee admission into the departmental Honors Program.

Honors students must meet stronger requirements. Specifically, honors students must meet all the requirements for a Bachelor of Science in Mathematics, but must also enroll in at least four hours of Mathematics 497 and take two upper division mathematics sequences (instead of one), one of which must be an honors sequence. Honors students must also maintain a 3.4 cumulative GPA in all upper-division math courses and write a thesis (normally while enrolled in Mathematics 497) that must be approved by an honors thesis committee. The honors category upon graduation is determined as follows, based on the GPA of all upper-division math courses: GPA at least 3.4—Honors; GPA at least 3.6—High Honors; GPA at least 3.8—Highest Honors.

Minor in Mathematics

Prerequisite to the minor: 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.

Department of MEDICAL BIOLOGY/MEMORIAL RESEARCH CENTER

The Department of Medical Biology of the University of Tennessee College of Medicine—Knoxville Unit was formed from the faculty of the University Memorial Research Center and Hospital in 1978. The Research Center was established in 1956. The faculty has research, education, and service interests in cancer, blood diseases, metabolism, neuroscience, birth defects, cytogenetics and clinical genetics. Courses in these areas are offered to students at the graduate and undergraduate levels. Elective courses are also available to students in the College of Medicine.

The faculty with the College of Veterinary Medicine participates in the graduate program leading to Master of Science and Doctor of Philosophy degrees in Comparative and Experimental Medicine. Other advanced degree students can do thesis research in the department by arrangement with other life science departments at the university.

Department of MICROBIOLOGY

http://web.bio.utk.edu/micro/

Jeffrey M. Becker, Head

Professors

Becker, J.M., PhD.................................................................Cincinnati
Brian, D.A., PhD/DVM..................................................Michigan State
Moore, R.N., PhD.............................................................Texas (Austin)
Riggsby, W.S., PhD............................................................Yale
Rouse, B.T., PhD.................................................................Guelph (Canada)
BVSc..........................................................Bristol (UK)
Saylor, G.S., PhD.................................................................Idaho
Small, P.L.C., PhD..............................................................Stanford
White, D.C. (Distinguished Scientist), MD, PhD...........Tufts

Associate Professor

Wilhelm, S., PhD...............................................................Western Ontario

Assistant Professors

Buchan, A., PhD.................................................................Georgia
Reynolds, T., PhD..............................................................Vanderbilt
Sangster, M.Y., PhD......................................................Western Australia (Perth)
Sparer, T.E., PhD.............................................................Emory University School of Medicine
Su, C., PhD.................................................................Penn State
Zinser, E., PhD.................................................................Harvard

Research Assistant Professors

Fleming, J., PhD..............................................................Tennessee
Hauser, M., PhD..............................................................California (Irvine)
Kumaraguru, U., PhD.........................................................Madras (India)
Layton, A.C., PhD..............................................................Purdue
Lee, B-K, PhD............................................................Tennessee
Piffner, S., PhD.................................................................Florida State
Ripp, S., PhD.................................................................Oklahoma State
Sanseverino, J., PhD......................................................Lehigh

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.
Department of
MODERN FOREIGN LANGUAGES AND LITERATURES
http://web.utk.edu/~mflsl/
Chauncey J. Mellor, Interim Head

Professors
Brady, P. (Shumway Chair of Excellence), PhD.Université de Paris (Sorbonne)
Brițio-Skov, F., PhD..................................................Washington
Campion, E.J., PhD......................................................Yale
Cree, B., PhD.............................................................California (Davis)
DiMaria, S., PhD.........................................................Wisconsin
Handel, M.H. (Distinguished Professor), PhD................Florida
Hodges C.R. (Associate Dean), PhD.................................Chicago
Holmlund, C., PhD..................................................Wisconsin
Levy, K.D., PhD.............................................................Kentucky
Mellor, C.J., PhD............................................................Chicago
Rivera-Rodas, O., PhD...........................................California (Davis)
Romeiser, J.B., PhD..................................................Vanderbilt
Young, D.J., PhD..................................................Texas

Associate Professors
Beauvais, M., PhD......................................................Texas
Blackwell, S.H., PhD................................................Indiana
Essif, L., PhD................................................................Brown
Höying, P., PhD...........................................................Wisconsin
Kaplan, G., PhD..........................................................Pennsylvania
LaCure, J., PhD..........................................................Indiana
Lee, D. E., PhD.............................................................Stanford
McAlpin, M.K., PhD................................................Columbia
Ohnesorg, S., PhD....................................................McGill
Purvukhina, N.K., PhD............................................Bryn Mawr
Silva-Filho, E., PhD..................................................North Carolina

Assistant Professors
Arnold, M.N., PhD..................................................Texas
Ayo, A., PhD.............................................................Arizona
Bernwald, O., PhD..................................................North Carolina
Cano, L., PhD..........................................................Penn State
Cruz-Cámara, N., PhD...........................................State University of New York (Buffalo)
Duke, D., PhD...........................................................Pittsburgh
Gimmel, M., PhD........................................................Indiana
Gregory, A., PhD........................................................Texas
He, D., PhD.................................................................British Columbia
Horiguchi, N., PhD..................................................Pennsylvania
Johnson, E., PhD........................................................Tennessee
Magilow, D., PhD......................................................Princeton

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 must 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 language and world business. 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, Knoxville. 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; one 3-hour literature course at the 400 level; 6 additional hours of French courses at the 300 or 400 level. Advanced students may substitute a 400-level course for either 333 or 334, with consent of the French faculty.

GERMAN MAJOR
Majors or minors in German should carefully prepare their programs in consultation with a departmental faculty advisor. German 201-202 or the equivalent is a prerequisite to the major. German 331-332 do not count toward the major. In order to graduate, majors will be required to take a proficiency test in German.

Language and Literature Concentration
Language and literature concentration consists of at least 30 hours of German in courses numbered above 300, including 301-302 and three hours chosen from German 323, 350, 363 or 415.
**German Studies Concentration**

The German studies concentration is designed for students who would like to focus on German-speaking countries from a comprehensive cultural perspective. The German studies concentration has four components: command of the German language; knowledge of the cultural achievements—art, music, philosophy, poetry, fiction, religion, theatre—of the German-speaking people; knowledge of the political, social, and cultural history of the German-speaking nations; and knowledge and understanding of contemporary institutions in German-speaking nations.

This concentration consists of 36 hours, distributed as follows

1. **Language.** Any four of the following: German 311, 312, 411, 412, 435, 485
2. **Literature.** Culture, Arts. Any four of the following: Art History 441; German 301, 302, 305, 323, 350, 415, 422, 423, 424; Music History 400, 420, 430; Philosophy 324, 326, 353, 370, 395; Religious Studies 385, 411
3. **History.** At least one of the following courses: German 436; History 315, 323, 334, 335, 471, 472, 484
4. **Contemporary Institutions.** At least one of the following courses: Geography 340; German 363
5. Two additional courses from 3 and 4 above

**Honors Concentration**

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.

**ITALIAN MAJOR**

The Italian major consists of 30 hours in courses numbered 311 and above.

**RUSSIAN MAJOR**

The Russian major has two options—literary emphasis and area studies. 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.

**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 History 340-341, and Political Science 459.

**Literary Emphasis Option**

The literary emphasis option requires Russian 451-452. Students may choose their remaining 12 hours from a group of courses that includes 221-222 and all courses numbered above 300.

**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. Majors who study a semester or more abroad must take the following at the University of Tennessee, Knoxville: 323 (which must be taken prior to any study abroad), 330, and three of the four required 400-level courses.

**Hispanic Studies Concentration**

One course from Spanish 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 Spanish 323 with consent of the department.

**Literature Concentration**

Spanish 332, 333, 334; four additional 400-level courses, at least two of which must be in literature.

**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 special major in Chinese, French, German, Italian, Japanese, Portuguese, Russian, or Spanish; a professional emphasis in international business, international retail merchandising, or international agricultural economics; and 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 27 hours. The following are required: Italian 314, 341, 342, 401, 3 hours of 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, 451, 452, three hours of Asian languages 490 or 491, and 1 of the following: Japanese 313, 314, or 413.

• 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: 311-312, 401-402, 451-452, 3 hours of 490 or 491, and 9 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: Spanish 323, 330, 331, 345 or 346, at least one 300-level literature survey course, three hours of Spanish 490 or 491, 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), and Portuguese 400. 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 26 hours, which includes the following courses: Accounting 200, Economics 201, Business Administration 201, Statistics 201, Finance 301, Marketing 300, Economics 313 or 323, and Management 472. All upper-division (300 level or above) coursework must be taken at The University of Tennessee unless otherwise approved by College of Business Administration and the Director of the Language and World Business program. 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 ensure that all prerequisites are met.

• International Retail Merchandising students will take 26 hours. The following are required: Accounting 200, Business Administration 201, Marketing 300, Retail and Consumer Sciences 210, 310, 421, and six additional credit hours from the following: Retail and Consumer Sciences 410, 411, 412, 415, 493. Students are responsible for meeting all prerequisites for business courses. Students should consult their catalogs and advisors to ensure that all prerequisites are met.

• International Agricultural Economics students will complete 25 hours. The following are required: Accounting 200, Business Administration 201, 320, 342, 350, 420, 430, and three credit hours from the following: Marketing 300, Management 300, 472, Finance 301. Students are responsible for meeting all prerequisites for business courses. Students should consult their catalogs and advisors to ensure 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 three 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; 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 is a prerequisite to the minor. The minor in Japanese consists of at least 20 hours of Japanese courses, including Asian Languages 351-352; 451-452; and 6 hours from Asian Languages 313-314, 413 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** consists of at least 18 hours of Russian courses including 311-312, 401-402, and 6 hours chosen from 221-222 and 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. Minors who study a semester or more abroad must take the following at the University of Tennessee, Knoxville: 323 (which must be taken prior to any study abroad), 330, and at least one additional course numbered above 300.

### School of MUSIC

[http://www.music.utk.edu](http://www.music.utk.edu)

Roger L. Stephens, Director
Barbara Murphy, Associate Director for Undergraduate Studies

**Professors**

Brock, J.P., MM................................................................. Alabama
Coker, J., MA................................................................ Texas
Jacobs, K.A., DMA......................................................... Sam Houston
Leach, C.F., DM............................................................. Northwestern
MacClelland, D.K., MA..................................................... Wisconsin
McCormann, W.S., MM.................................................. Columbia
Moore, M.C., PhD........................................................... Michigan
Northington, D.B., DMA................................................ Yale
Pederson, D.M., PhD......................................................... Iowa
Sousa, G.D., PhD................................................................. Ohio State
Stephens, R., MM..................................................... East Carolina
Stutenberger, D.R., DMA........................................... Maryland

**Associate Professors**

Adams, F., MM..................................................................... Tennessee
Baldwin, W., DMA................................................................. Maryland
Batay, A.L., DMA................................................................. South Carolina
Binder, S., DM................................................................... Florida State
Boling, M., MM................................................................. Tennessee
Brown, D.R................................................................. Memphis
Brunell, D., DM................................................................. Indiana
Carter, P.Z., MM................................................................. Colorado
Freeman, C., MPA.............................................................. Oklahoma City
Gay, L.C., PhD................................................................. Columbia
Hough, D.H., MM................................................................. Tennessee
Murphy, B.A., PhD............................................................ Ohio State
Royse, D., PhD................................................................. Kent State
Searle, S.R., MM................................................................. Tennessee
Smith, C., BM.................................................................. State University of New York
Sperl, G.R., MM................................................................. Indiana
Stephens, M.B., MA, MM................................................ Ohio State
Wentzel, A.N., MM.......................................................... Southern California
Zelmanovich, M., MA..................................................... Lvov

**Assistant Professors**

Al-Tace, N., PhD............................................................... California (Los Angeles)
Browne, S., MM................................................................. Rice
Carlson, R.G., PhD............................................................ North Carolina (Chapel Hill)
Ewell, P., PhD................................................................. Yale
Fellenbaum, J., MM.......................................................... Northwestern
Hawthorne, W.W., PhD................................................ Cincinnati
Lee, C., DM................................................................. Florida State
Powell, E., DMA............................................................... North Texas
Ryder, D., DMA................................................................. Iowa
Skoog, A., MA................................................................. Stephen F. Austin

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**Lecturers**

Brown, K., BA................................................................. Tennessee
Holloway, H., BM............................................................ Tennessee
McCormann, D., MM.................................................. Tennessee

**Part-time Lecturers**

Carlson, J., PhD................................................................. Duke
DeSouza, D., PhD............................................................. Ohio State
Harreil, K., BM................................................................. Tennessee
Ladd, K., PhD................................................................. Ohio State
Lee, A., MM................................................................. Ohio
Massie-Jegg, A., MM.................................................... Ohio
Secrist, P., MM................................................................. Yale
Thompson, D.Y., MM.................................................. DePaul
Vincent, L., MM................................................................. Tennessee
Werner, W., MM................................................................. Tennessee

The School of Music provides specialized training in music to prepare students for professional work or advanced study; for teaching music in the elementary and secondary schools, and in higher education; and for general cultural enrichment. The curriculum of the School of Music, therefore, is designed to present the learning of music as an integrated whole. Solo and ensemble performance, theoretical and historical studies, concert attendance, and electives both within and outside the school are intended to provide a balanced education. The school also provides general music studies and performance.

**Progression Requirements**

All new music students (freshman and transfers) must perform an audition in applied music and take a music theory examination. No student officially progresses to major in music until the audition has been passed and the theory placement examination has been taken. The results of the audition and theory exam will determine the student’s placement in applied music and theory. Both the audition and theory exam should be completed during a visit to the University prior to final arrival to begin classes. Applicants are urged to contact the School of Music to schedule appointments for satisfying both requirements as early as possible, but certainly no later than the summer orientation period.

**General Requirements**

Students in the School of Music are required to consult the School of Music Undergraduate Handbook, available in Room 211 Music Building, for departmental policies and procedures pertaining to music degrees.

**Minimum Performance Standards**

Potential performance and music education majors not meeting minimum performance standards, but showing potential, will be allowed to register for applied music (Music 140—Fundamentals of Performance) in order to attain the desired level. Such students are normally expected to demonstrate sufficient progress by the end of the first academic year to perform on a level commensurate with a freshman student accepted without reservation by the school. The addition of the extra semesters of study usually results in lengthening the period needed to satisfy requirements for advanced standing (300 level).

Students entering any one of the three emphases in music education must complete the same audition procedures as those
of performance majors. At the end of the second year or after having completed the required courses, students will participate in an interview with an appointed Admissions Board. Upon receiving positive recommendation from this board, students are admitted to the teacher education program and permitted to take upper division education courses.

Students who pursue the music education curriculum are subject to all rules and regulations of the Teacher Education Program, which is housed in the College of Education, Heath, and Human Sciences, notwithstanding the fact that their degree will be awarded from the College of Arts and Sciences.

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, 1-3 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 private 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.

Solo Class: All music majors are required to register for Music General 200: Solo Class every fall and spring they are enrolled in applied music, 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 requirement.

Applied Music Fees

$80 per semester for half-hour lesson (one credit hour); $160 per semester for hour lesson (two to four 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 (Music Keyboard 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

Music Major

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 (six 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

<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></td>
</tr>
<tr>
<td>Music General 200</td>
<td>0.0</td>
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<tr>
<td>Music Theory 110, 120</td>
<td>3.3</td>
<td></td>
</tr>
<tr>
<td>Music Theory 130, 140</td>
<td>1.1</td>
<td></td>
</tr>
<tr>
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<tr>
<td>Music Education 230</td>
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</tr>
<tr>
<td>Music Keyboard 110, 120</td>
<td>1.1</td>
<td></td>
</tr>
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</table>
Sophomore Year
'Cultures and Civilizations* .................................................. 3.3
Child and Family Studies 210* ................................................ 3
Music Performance (200 level) .............................................. 2.2
Music General 200 .................................................................. 0.0
'Music Ensemble .................................................................... 1.1
'Music Ensemble 359 .............................................................. 1
'Music Theory 210, 220 ............................................................ 1.1
'Music Theory 230, 240 ............................................................ 1.1
Musicalology 210*, 220* .......................................................... 3.3
Music Education 210, 211 ......................................................... 1.1
Music Education 220, 221 ......................................................... 1.1

Junior Year
'Communicating Orally* ........................................................ 3
Mathematics 115* .................................................................. 3
'Natural Sciences* ................................................................. 4
Music Performance (200 or 300 level) ................................. 2.2
'Music General 200 ................................................................. 0.0
'Music Ensemble .................................................................... 1.1
'Music Ensemble 359 .............................................................. 1
'Music Theory 320 .................................................................. 2
Musicalology 380* .................................................................. 3
Music Education 350 .............................................................. 1.1
Music Education 310, 320 ......................................................... 3.2
Music Education 200 .............................................................. 1
Music Education 212 .............................................................. 1
Instructional Technology 486 ............................................... 3

Senior Year
'Social Sciences* ..................................................................... 3
'Natural Sciences* ................................................................. 3
'Quantitative Reasoning* ...................................................... 3
Music Performance (300 or 400 level) ......................... 2.2
'Music General 200 ................................................................. 0.0
'Music Ensemble .................................................................... 1.1
'Music General 301 ................................................................. 0
'Music Education 340 ............................................................. 3
'Music Education 420 ............................................................. 3
'Music Education 430 ............................................................. 3
'Music Education 440 ............................................................. 2
'Cultural Studies in Education 400 ........................................ 2
'Educational Psychology 401 ................................................ 2
'Special Education 402 ........................................................... 2

Internship Year
'Music Education 575 .............................................................. 8.4
'Music Education 574 .............................................................. 2
'Music Education 591 .............................................................. 4
Electives in Music Education or Music ........................... 6

Total 128 plus 24 graduate

*Meets University General Education Requirement.
1Chosen from Music Ensemble 350, 352, 353.
2See Cultures and Civilizations – University General Education Requirement. Select two courses on the list or two courses in a foreign language at the intermediate level.
3See Communicating Orally – University General Education Requirement. Select one course from the list.
4See Social Sciences list – University General Education Requirement.
5See Quantitative Reasoning list – University General Education Requirement.

Requirements for the Bachelor of Music • Music Major • Music Education Concentration—Wind/Percussion Emphasis (4-year alternative)

<table>
<thead>
<tr>
<th>Freshman</th>
<th>Hours</th>
<th>Credit</th>
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<tbody>
<tr>
<td>English 101*, 102*</td>
<td>3.3</td>
<td></td>
</tr>
<tr>
<td>Music Performance (100 level)</td>
<td>2.2</td>
<td></td>
</tr>
<tr>
<td>Music General 200</td>
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<td></td>
</tr>
</tbody>
</table>

1'Music Ensemble .................................................................... 1.1
'Music Ensemble 359 .............................................................. 1
'Music Theory 110, 120 .......................................................... 3.3
'Music Theory 130, 140 .......................................................... 1.1
'Musicalology 110* ............................................................... 3
'Music Education 230 ............................................................ 1
'Music Education 240 or 241 ................................................... 1
'Music Keyboard 110, 120 ....................................................... 1

Sophomore
'Cultures and Civilizations* .................................................. 3.3
Child and Family Studies 210* ................................................ 3
Music Performance (200 level) .............................................. 2.2
Music General 200 .................................................................. 0.0
'Music Ensemble ..................................................................... 1.1
'Music Ensemble 359 .............................................................. 1
'Music Theory 210, 220 .......................................................... 3.3
'Music Theory 230, 240 .......................................................... 1.1
Musicalology 210*, 220* ......................................................... 3.3
Music Education 210, 211 ......................................................... 1.1
Music Education 220, 221 ......................................................... 1.1

Junior
'Communicating Orally* ........................................................ 3
Mathematics 115* .................................................................. 3
'Natural Sciences* ................................................................. 4
Music Performance (200 or 300 level) ................................. 2.2
'Music General 200 ................................................................. 0.0
'Music Ensemble .................................................................... 1.1
'Music Ensemble 359 .............................................................. 1
'Music Theory 320 .................................................................. 2
Musicalology 380* .................................................................. 3
Music Education 350 .............................................................. 1.1
Music Education 310, 320 ......................................................... 3.2
Music Education 200 .............................................................. 1
Music Education 212 .............................................................. 1
Instructional Technology 486 ............................................... 3

Senior
'Social Sciences* ..................................................................... 3
'Natural Sciences* ................................................................. 3
'Quantitative Reasoning* ...................................................... 3
Music Performance (300 or 400 level) ......................... 2.2
'Music General 200 ................................................................. 0.0
'Music Ensemble .................................................................... 1.1
'Music Ensemble 359 .............................................................. 1
'Music Theory 320 .................................................................. 2
Musicalology 380* .................................................................. 3
Music Education 350 .............................................................. 1.1
Music Education 310, 320 ......................................................... 3.2
Music Education 200 .............................................................. 1
Music Education 212 .............................................................. 1
Instructional Technology 486 ............................................... 3

Total 137

*Meets University General Education Requirement.
1Chosen from Music Ensemble 350, 352, 353.
2See Cultures and Civilizations – University General Education Requirement. Select two courses on the list or two courses in a foreign language at the intermediate level.
3See Communicating Orally – University General Education Requirement. Select one course from the list.
4See Social Sciences list – University General Education Requirement.
5See Quantitative Reasoning list – University General Education Requirement.
### Requirements for the Bachelor of Music Degree

**• Music Major • Music Education Concentration—String Emphasis (5-year option)**

<table>
<thead>
<tr>
<th>Freshman</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>English 101*, 102*</td>
<td>3.3</td>
</tr>
<tr>
<td>Music Performance (100 level)</td>
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<tr>
<td>Music General 200</td>
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<tr>
<td>Music Ensemble 370</td>
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<td>Music Theory 130, 140</td>
<td>1.1</td>
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<tr>
<td>Musicology 110*</td>
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<tr>
<td>Music Education 240, 241</td>
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</tr>
<tr>
<td>Music Keyboard 110, 120</td>
<td>1.1</td>
</tr>
</tbody>
</table>

**Sophomore**

| 'Cultures and Civilizations' | 3.3 |
| 'Child and Family Studies 210*' | 3 |
| Music Performance (200 level) | 2.2 |
| Music General 200 | 0.0 |
| Music Ensemble 370 | 1.1 |
| Music Theory 210, 220 | 3.3 |
| Music Theory 230, 240 | 1.1 |
| Musicology 210*, 220* | 3.3 |
| Music Education 210 | 1 |
| Music Education 220 | 1 |

**Junior**

| 'Communicating Orally' | 3 |
| Mathematics 115* | 3 |
| 'Natural Sciences' | 4 |
| Music Performance (200 or 300 level) | 2.2 |
| Music General 200 | 0.0 |
| Music Ensemble 370 | 1.1 |
| Music Theory 320 | 2 |
| Music Ensemble 315 | 1.1 |
| Musicology 380* | 3 |
| Music Education 230 | 1 |
| Music Education 350 | 1.1 |
| Music Education 310, 320 | 3.2 |
| Music Education 200 | 1 |
| Instructional Technology 486 | 3 |

**Senior**

| 'Social Sciences' | 3 |
| 'Natural Sciences' | 3 |
| 'Quantitative Reasoning'* | 3 |
| Music Performance (300 or 400 level) | 2.2 |
| Music General 200 | 0.0 |
| Music Ensemble 370 | 1.1 |
| Music General 301 | 0 |
| Music Education 340 | 3 |
| Music Education 420 | 3 |
| Music Education 430 | 3 |
| Music Education 441 | 2 |
| Cultural Studies in Education 400 | 2 |
| Educational Psychology 401 | 2 |
| Special Education 402 | 2 |

**Internship Year**

| Music Education 575 | 8.4 |
| Music Education 574 | 2 |
| Music Education 591 | 4 |
| Electives in Music Education or Music | 6 |

*Total 125 plus 24 graduate*

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*See Communicating Orally – University General Education Requirement. Select one course from the list.

*See Cultures and Civilizations – University General Education Requirement. Select two courses from the list.

*See Natural Sciences – University General Education Requirement.

*See Quantitative Reasoning list – University General Education Requirement.

### Requirements for the Bachelor of Music • Music Major • Music Education Concentration—String Emphasis (4-year alternative)

<table>
<thead>
<tr>
<th>Freshman</th>
<th>Hours Credit</th>
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<tbody>
<tr>
<td>English 101*, 102*</td>
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<tr>
<td>Music Performance (100 level)</td>
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<tr>
<td>Music Theory 130, 140</td>
<td>1.1</td>
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<tr>
<td>Musicology 110*</td>
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<tr>
<td>Music Education 240, 241</td>
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</tr>
<tr>
<td>Music Keyboard 110, 120</td>
<td>1.1</td>
</tr>
</tbody>
</table>

**Sophomore**

| 'Cultures and Civilizations' | 3.3 |
| 'Child and Family Studies 210*' | 3 |
| Music Performance (200 level) | 2.2 |
| Music General 200 | 0.0 |
| Music Ensemble 370 | 1.1 |
| Music Theory 210, 220 | 3.3 |
| Music Theory 230, 240 | 1.1 |
| Musicology 210* 220* | 3.3 |
| Music Education 210 | 1 |
| Music Education 220 | 1 |

**Junior**

| 'Communicating Orally' | 3 |
| Mathematics 115* | 3 |
| 'Natural Sciences' | 4 |
| Music Performance (200 or 300 level) | 2.2 |
| Music General 200 | 0.0 |
| Music Ensemble 370 | 1.1 |
| Music Theory 320 | 2 |
| Music Ensemble 315 | 1.1 |
| Musicology 380* | 3 |
| Music Education 230 | 1 |
| Music Education 350 | 1.1 |
| Music Education 310, 320 | 3.2 |
| Music Education 200 | 1 |
| Instructional Technology 486 | 3 |

**Senior**

| 'Social Sciences' | 3 |
| 'Natural Sciences' | 3 |
| 'Quantitative Reasoning'* | 3 |
| Music Performance (300 or 400 level) | 2 |
| Music General 200 | 0.0 |
| Music Ensemble 370 | 1.1 |
| Music General 301 | 0 |
| Music Education 340 | 3 |
| Music Education 420 | 3 |
| Music Education 430 | 3 |
| Music Education 441 | 2 |
| Cultural Studies in Education 400 | 2 |
| Educational Psychology 401 | 2 |
| Special Education 402 | 2 |

*Total 134*

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*See Communicating Orally – University General Education Requirement. Select one course from the list.

*See Cultures and Civilizations – University General Education Requirement. Select two courses from the list. At least one of the courses must have a laboratory.

*See Social Sciences – University General Education Requirement.

*See Quantitative Reasoning list – University General Education Requirement.

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*Meets University General Education Requirement.
**Requirements for the Bachelor of Music • Music Major • Music Education—Vocal/General Concentration/Keyboard Emphasis (5-year option)**

<table>
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<tr>
<th>Class</th>
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<td>Freshman</td>
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<tr>
<td>1Communicating Orally*</td>
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<tr>
<td>Music Performance (100-level Keyboard)</td>
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<td>Music Performance 155, 156 or Music Voice 110</td>
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<td>Music Ensemble</td>
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<tr>
<td>Music Theory 110, 120</td>
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<tr>
<td>Music Theory 130, 140</td>
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<td>Music Education 240 or 241</td>
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<tr>
<td>Sophomore</td>
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</tr>
<tr>
<td>1Cultures and Civilizations*</td>
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<td>Child and Family Studies 210*</td>
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<td>Music Performance 155, 156 or 255, 256 (Voice)</td>
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<td>Music Education 310, 320</td>
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<td>Music Ensemble 399</td>
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<td>Music Voice 450</td>
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<tr>
<td>Instructional Technology 486</td>
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<td>Music Performance (300 or 400 level)</td>
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<tr>
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<td>Music Ensemble</td>
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<tr>
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<tr>
<td>Cultural Studies in Education 400</td>
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<td></td>
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<tr>
<td>Educational Psychology 401</td>
<td>2</td>
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<tr>
<td>Special Education 402</td>
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**Internship Year**

<table>
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<td>Music Education 591</td>
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<tr>
<td>Electives in Music Education or Music</td>
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</table>

Total 129-130 plus 24 graduate

*See Cultures and Civilizations – University General Education Requirement.
*See Communicating Orally – University General Education Requirement.
*See Social Sciences list – University General Education Requirement.
*See Natural Sciences – University General Education Requirement. Select two courses on the list or two courses in a foreign language at the intermediate level.
*See Natural Sciences – University General Education Requirement. Select two courses from the list. At least one of the courses must have a laboratory.
*See Quantitative Reasoning list – University General Education Requirement.

**Requirements for the Bachelor of Music • Music Major • Music Education—Vocal/General Concentration/Keyboard Emphasis (4-year alternative)**

<table>
<thead>
<tr>
<th>Class</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Freshman</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1Communicating Orally*</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Music Performance (100-level Keyboard)</td>
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<td></td>
</tr>
<tr>
<td>Music Performance 155, 156 or Music Voice 110</td>
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<td></td>
</tr>
<tr>
<td>Music General 200</td>
<td>0.0</td>
<td></td>
</tr>
<tr>
<td>Music Ensemble</td>
<td>1.1</td>
<td></td>
</tr>
<tr>
<td>Music Theory 110, 120</td>
<td>3.3</td>
<td></td>
</tr>
<tr>
<td>Music Theory 130, 140</td>
<td>1.1</td>
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<tr>
<td>Musicology 110*</td>
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<tr>
<td>Music Education 240 or 241</td>
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</tr>
<tr>
<td>Sophomore</td>
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<td></td>
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<td>1Cultures and Civilizations*</td>
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<tr>
<td>Music Theory 210, 220</td>
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<tr>
<td>Music Theory 230, 240</td>
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<tr>
<td>Musicology 210*, 220*</td>
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<tr>
<td>Music Education 201</td>
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<tr>
<td>Junior</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1Natural Sciences*</td>
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<tr>
<td>Mathematics 115*</td>
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<td>Music Performance (200 or 300 level)</td>
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<tr>
<td>Music Ensemble</td>
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<td>Music Theory 310 or 320</td>
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<td>Music Theory 450</td>
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<td>Music Education 310, 320</td>
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<tr>
<td>Music Voice 450</td>
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<tr>
<td>Instructional Technology 486</td>
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<tr>
<td>Senior</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1Natural Sciences*</td>
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<td></td>
</tr>
<tr>
<td>1Quantitative Reasoning*</td>
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<td>1Social Sciences*</td>
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<td></td>
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<tr>
<td>Music Performance (300- or 400-level Keyboard)</td>
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<td></td>
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<tr>
<td>Music General 200</td>
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<tr>
<td>Music Ensemble</td>
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<td></td>
</tr>
<tr>
<td>Music Education 200</td>
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<tr>
<td>Music Education 201</td>
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<tr>
<td>Music Education 330</td>
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</table>
Music Education 350 .................................................. 1
Music Education 420 .................................................. 3
Music Education 430 .................................................. 3
Music General 301 .................................................. 0
Cultural Studies in Education 400 .................................. 2
Educational Psychology 401 ........................................ 2
Special Education 402 .................................................. 2
Music Education 400 .................................................. 12
Music Education 401 .................................................. 0

*Meets University General Education Requirement.
1See Communicating Orally – University General Education Requirement. Select one course from the list.
2See Cultures and Civilizations – University General Education Requirement. Select two courses on the list or two courses in a foreign language at the intermediate level.
3See Natural Sciences – University General Education Requirement. Select two courses from the list. At least one of the courses must have a laboratory.
4See Quantitative Reasoning list – University General Education Requirement.
5See Social Sciences list – University General Education Requirement.

Requirements for the Bachelor of Music • Music Major •
Music Education—Vocal/General Concentration/
Vocal Emphasis (5-year option)

<table>
<thead>
<tr>
<th>Freshman</th>
<th>Hours Credit</th>
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<tbody>
<tr>
<td>English 101*, 102*</td>
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</tr>
<tr>
<td>'Communicating Orally*</td>
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</tr>
<tr>
<td>Music Performance (100-level Voice)</td>
<td>2,2</td>
</tr>
<tr>
<td>Music General 200</td>
<td>0,0</td>
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<tr>
<td>Music Ensemble</td>
<td>1,1</td>
</tr>
<tr>
<td>Music Theory 110, 120</td>
<td>3,3</td>
</tr>
<tr>
<td>Music Theory 130, 140</td>
<td>1,1</td>
</tr>
<tr>
<td>Musicology 110*</td>
<td>3</td>
</tr>
<tr>
<td>Music Education 240 or 241</td>
<td>1</td>
</tr>
<tr>
<td>Music Keyboard 110, 120</td>
<td>1,1</td>
</tr>
</tbody>
</table>

Sophomore
1Cultures and Civilizations* .................................. 3,3
Child and Family Studies 210* ................................ 3
Music Performance (200-level Voice) .......................... 2,2
Music General 200 .................................................. 0,0
Music Ensemble .................................................. 1,1
Music Theory 210, 220 ............................................ 3,3
Music Theory 230, 240 ............................................ 1,1
Musicology 210*, 220* ............................................ 3,3
Music Education 200 ............................................. 1
Music Education 201 ............................................. 1
Music Keyboard 210, 220 ........................................ 1,1

Junior
1Natural Sciences* .................................................. 4
Mathematics 115* .................................................. 3
Music Performance (200- or 300-level Voice) ............... 2,2
Music General 200 .................................................. 0,0
Music Ensemble .................................................. 1,1
Music Theory 310 or 320 ........................................ 2,3
Music Theory 450 .................................................. 2
Musicology 380* .................................................. 3
Music Education 210 or 211 .................................... 1
Music Education 250 ............................................. 1,1
Music Education 310, 320 ........................................ 3,2
Music Voice 450 .................................................. 2
Instructional Technology 486 ................................... 3

Senior
1Natural Sciences* .................................................. 3
1Quantitative Reasoning* ........................................ 3
1Social Sciences* .................................................. 3
Music Performance (300- or 400-level Voice) ............... 2,2
Music General 200 .................................................. 0,0

'Music Ensemble .................................................. 1,1
Music Education 200 ............................................. 1
Music Education 330 ............................................. 3
Music Education 350 ............................................. 1
Music Education 420 ............................................. 3
Music Education 430 ............................................. 3
Music General 301 .................................................
Cultural Studies in Education 400 ................................ 2
Educational Psychology 401 ...................................... 2
Special Education 402 ............................................. 2

Total 138-139

Requirements for the Bachelor of Music • Music Major •
Music Education—Vocal/General Concentration/
Vocal Emphasis (4-year alternative)

<table>
<thead>
<tr>
<th>Freshman</th>
<th>Hours Credit</th>
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<tbody>
<tr>
<td>English 101*, 102*</td>
<td>3,3</td>
</tr>
<tr>
<td>'Communicating Orally*</td>
<td>3</td>
</tr>
<tr>
<td>Music Performance (100-level Voice)</td>
<td>2,2</td>
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<tr>
<td>Music General 200</td>
<td>0,0</td>
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<tr>
<td>Music Ensemble</td>
<td>1,1</td>
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<tr>
<td>Music Theory 110, 120</td>
<td>3,3</td>
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<tr>
<td>Music Theory 130, 140</td>
<td>1,1</td>
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<tr>
<td>Musicology 110*</td>
<td>3</td>
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<tr>
<td>Music Education 240 or 241</td>
<td>1</td>
</tr>
<tr>
<td>Music Keyboard 110, 120</td>
<td>1,1</td>
</tr>
</tbody>
</table>

Sophomore
1Cultures and Civilizations* .................................. 3,3
Child and Family Studies 210* ................................ 3
Music Performance (200-level Voice) .......................... 2,2
Music General 200 .................................................. 0,0
Music Ensemble .................................................. 1,1
Music Theory 210, 220 ............................................ 3,3
Music Theory 230, 240 ............................................ 1,1
Musicology 210*, 220* ............................................ 3,3
Music Education 200 ............................................. 1
Music Education 201 ............................................. 1
Music Keyboard 210, 220 ........................................ 1,1

Junior
1Natural Sciences* .................................................. 4
Mathematics 115* .................................................. 3
Music Performance (200- or 300-level Voice) ............... 2,2
Music General 200 .................................................. 0,0
Music Ensemble .................................................. 1,1
Music Theory 210, 220 ............................................ 3,3
Music Theory 230, 240 ............................................ 1,1
Musicology 210*, 220* ............................................ 3,3
Music Education 200 ............................................. 1
Music Education 201 ............................................. 1
Music Keyboard 210, 220 ........................................ 1,1

Senior
1Natural Sciences* .................................................. 3
1Quantitative Reasoning* ........................................ 3
1Social Sciences* .................................................. 3
Music Performance (300- or 400-level Voice) ............... 2,2
Music General 200 .................................................. 0,0
Music Ensemble .................................................. 1,1
Music Theory 310 or 320 ........................................ 2,3
Music Theory 450 .................................................. 2
Musicology 380* .................................................. 3
Music Education 210 or 211 .................................... 1
Music Education 250 ............................................. 1,1
Music Education 310, 320 ........................................ 3,2

Total 127-128 plus 24 graduate
<table>
<thead>
<tr>
<th>Semester</th>
<th>Courses</th>
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<tr>
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<td></td>
<td>Instructional Technology 486 ................................. 3</td>
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</table>
|          | **Senior Year** ..............................
|          | 'Natural Sciences* .................................................... 3 |
|          | 'Quantitative Reasoning* ........................................... 3 |
|          | 'Social Sciences* .................................................... 3 |
|          | Music Performance (300- or 400-level Voice) ................ 2 |
|          | Music General 200 ................................................... 0 |
|          | Music Ensemble ........................................................ 1 |
|          | Music Education 200 .................................................. 1 |
|          | Music Education 330 .................................................. 3 |
|          | Music Education 420 .................................................. 3 |
|          | Music Education 430 .................................................. 3 |
|          | Music General 301 .................................................... 0 |
|          | Cultural Studies in Education 400 ............................... 2 |
|          | Educational Psychology 401 .......................................... 2 |
|          | Special Education 402 ................................................ 2 |
|          | Music Education 400 .................................................. 12 |
|          | Music Education 401 .................................................. 0 |
|          | **Total 136-137** |
|          | **Freshman Hours Credit** .................................
|          | Music General 401 .................................................... 0 |
|          | Music Education 400 .................................................. 12 |
|          | Music Education 401 .................................................. 0 |
|          | Music Ensemble ........................................................ 1 |
|          | Music General 401 .................................................... 0 |
|          | **Summary** ..............................
|          | Total 120 |

*Meets University General Education Requirement.

See Communicating Orally – University General Education Requirement. Select one course from the list.

See Cultures and Civilizations – University General Education Requirement. Select two courses from the list.

See Natural Sciences – University General Education Requirement. Select at least one of the courses must have a laboratory.

See Quantitative Reasoning – University General Education Requirement. Select at least one of the courses must have a laboratory.

See Social Sciences – University General Education Requirement. Select two courses from the list.

See Communicating Orally – University General Education Requirement. Select one course from the list.

See Natural Sciences – University General Education Requirement. Select two courses from the list.

Optional Full Recital with approval of major area.

**Requirements for the Bachelor of Music • Music Major • Piano Concentration**

<table>
<thead>
<tr>
<th>Semester</th>
<th>Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freshman</td>
<td>English 101*, 102* ............................................. 3,3</td>
</tr>
<tr>
<td></td>
<td>Music Theory 110, 120 ............................................. 3,3</td>
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<td>Music Theory 130, 140 ............................................. 3,3</td>
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<tr>
<td></td>
<td>Musicology 110* ..................................................... 3</td>
</tr>
<tr>
<td></td>
<td>Music Performance 190 ............................................. 3,3</td>
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<tr>
<td></td>
<td>Music Ensemble ..................................................... 1,1</td>
</tr>
<tr>
<td></td>
<td>Music General 200 .................................................... 0</td>
</tr>
<tr>
<td></td>
<td>Foreign Language (200-level sequence)* ....................... 3,3</td>
</tr>
<tr>
<td>Sophomore</td>
<td>Music Theory 210*, 220* ...................................... 3,3</td>
</tr>
<tr>
<td></td>
<td>Music Theory 230, 240 ............................................. 3,3</td>
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<tr>
<td></td>
<td>Musicology 210*, 220* ............................................. 3,3</td>
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<tr>
<td></td>
<td>Music Performance 290 ............................................. 3,3</td>
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<tr>
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<td>Music Ensemble ..................................................... 1,1</td>
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<td>Music General 200 .................................................... 0</td>
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<td>Electives ......................................................... 3,3</td>
</tr>
<tr>
<td>Junior</td>
<td>Musicology 380* ..................................................... 3</td>
</tr>
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<td>Music Theory 310 ..................................................... 3</td>
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<td>Music Performance 390 ............................................. 3,3</td>
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<td>Music Keyboard 230 .................................................. 1</td>
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<td>Music Keyboard 410 .................................................. 1</td>
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<td>Music Theory 430 ..................................................... 3</td>
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<td>Music Ensemble ..................................................... 1,1</td>
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<td>Music General 200 .................................................... 1</td>
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<tr>
<td></td>
<td>Music General 301 .................................................... 0</td>
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<tr>
<td></td>
<td>Social Sciences* ..................................................... 3,3</td>
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<tr>
<td></td>
<td>Electives ......................................................... 3,3</td>
</tr>
<tr>
<td></td>
<td>Communicating Orally* ............................................. 3,3</td>
</tr>
</tbody>
</table>
|          | **Summary** ..............................
|          | Total 120 |

*Meets University General Education Requirement.

See Cultures and Civilizations – University General Education Requirement. Select two non-U.S. History courses on the list or two courses in a foreign language at the intermediate level.

See Quantitative Reasoning – University General Education Requirement. Select two courses from the list.
See Social Sciences – University General Education Requirement. Select two courses from the list.

See Quantitative Reasoning list – University General Education Requirement.

### Requirements for the Bachelor of Music • Music Major • Piano Pedagogy Concentration

<table>
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<th>Courses</th>
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<td>Music Theory 110, 120 3,3</td>
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<td>Music General 200 0,0</td>
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<tr>
<td></td>
<td>3Cultures and Civilization* 3,3</td>
</tr>
<tr>
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<td>Music Ensemble 1,1</td>
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<tr>
<td>Sophomore</td>
<td>Music Theory 210, 220 3,3</td>
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<td>Music Theory 230, 240 1,1</td>
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<td>Musicology 210*, 220* 3,3</td>
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<td>Music Performance 280 2,2</td>
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<td>Music General 200 0</td>
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<tr>
<td></td>
<td>3Natural Sciences* 4,3</td>
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<td>Music Keyboard 460, 470 3,3</td>
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<td>Music Performance 190 (Organ) 2,2</td>
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<td>3Quantitative Reasoning* 3,3</td>
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<tr>
<td></td>
<td>Music Education 1,1</td>
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<tr>
<td>Junior</td>
<td>Musicology 380* 3</td>
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<tr>
<td></td>
<td>Psychology 110* 3</td>
</tr>
<tr>
<td></td>
<td>Social Sciences* 3</td>
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<td></td>
<td>Music Theory 230, 240 1,1</td>
</tr>
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<td></td>
<td>Music Education 200 1,1</td>
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<td></td>
<td>Music General 301 0</td>
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<td>Music Keyboard 420, 430 3,3</td>
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<tr>
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<td>3Quantitative Reasoning* 3,3</td>
</tr>
<tr>
<td></td>
<td>Music General 200 0</td>
</tr>
<tr>
<td></td>
<td>Music Keyboard 490, 491 2,2</td>
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<tr>
<td></td>
<td>Music General 401 0</td>
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<td></td>
<td>3Communicating Orally* 3</td>
</tr>
<tr>
<td></td>
<td>Electives 2</td>
</tr>
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</table>

Total 120

*Meets University General Education Requirement.

*See Social Sciences – University General Education Requirement. Select one course from the list.

*See Quantitative Reasoning list – University General Education Requirement. Select one course from the list.

*See Communicating Orally – University General Education Requirement. Select one course from the list.

*See Communicating Orally – University General Education Requirement. Select one course from the list.

### Requirements for the Bachelor of Music • Music Major • Sacred Music Concentration • Organ Track

<table>
<thead>
<tr>
<th>Term</th>
<th>Courses</th>
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<tbody>
<tr>
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<td>English 101*, 102* 3,3</td>
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<td></td>
<td>Music Theory 110, 120 3,3</td>
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<td></td>
<td>Music Theory 130, 140 1,1</td>
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<tr>
<td></td>
<td>Musicology 110* 3</td>
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<tr>
<td></td>
<td>Music Ensemble 1,1</td>
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<tr>
<td></td>
<td>Music Performance 190 (Organ) 2,2</td>
</tr>
<tr>
<td></td>
<td>Foreign Language (200-level sequence) 3,3</td>
</tr>
<tr>
<td></td>
<td>Music General 200 0</td>
</tr>
<tr>
<td></td>
<td>Music Voice 110 or Music Performance 155 1,1</td>
</tr>
<tr>
<td>Sophomore</td>
<td>Music Theory 210, 220 3,3</td>
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<td>Music Theory 310 3</td>
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<td>Senior</td>
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<td>Music Keyboard 410 1</td>
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<td>Music Keyboard 460, 470 3,3</td>
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<td>Music Ensemble 1,1</td>
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<td>Music General 200 0</td>
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<td>Music General 401 0</td>
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<td>3Social Sciences* 3</td>
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<td>Electives 2</td>
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Total 120

*Meets University General Education Requirement.

*See Quantitative Reasoning list – University General Education Requirement. Select two courses from the list.

*See Social Sciences list – University General Education Requirement.


*See Communicating Orally – University General Education Requirement. Select one course from the list.

*See Communicating Orally – University General Education Requirement. Select one course from the list.

### Requirements for the Bachelor of Music • Music Major • Piano Track

<table>
<thead>
<tr>
<th>Term</th>
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<tbody>
<tr>
<td>Freshman</td>
<td>English 101*, 102* 3,3</td>
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<td>Music Theory 110, 120 3,3</td>
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<td>Music Theory 130, 140 1,1</td>
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</table>

Total 120

*Meets University General Education Requirement.

*See Quantitative Reasoning list – University General Education Requirement. Select two courses from the list.

*See Social Sciences list – University General Education Requirement.


*See Communicating Orally – University General Education Requirement. Select one course from the list.

*See Communicating Orally – University General Education Requirement. Select one course from the list.

*See Communicating Orally – University General Education Requirement. Select one course from the list.
Musicology 110* .............................................. 3
Music Performance 189, 190 (Organ) ........................ 1,1
1Music Ensemble .............................................. 1,1
Music Performance 180, 181 (Piano) ......................... 2,2
Foreign Language (200-level sequence)* ...................... 3,3
Music General 200 ............................................. 0,0

Sophomore
1Quantitative Reasoning* ....................................... 3,3
Music Theory 210, 220 ........................................ 3,3
Music Theory 230, 240 ........................................ 1,1
Musicology 210*, 220* ........................................ 3,3
1Music Ensemble .............................................. 1,1
Music Performance 280, 281 (Piano) ......................... 2,2
Music Performance 289, 290 (Organ) ......................... 1,1
Music Keyboard 230 .......................................... 1
Music Keyboard 410 .......................................... 1
Music Education 200 ........................................... 1
Music General 200 ............................................. 0,0

Junior
1Social Sciences* ................................................ 3,3
Musicology 380* ............................................... 3
Music Theory 310 ............................................... 3
Musicology 480 ................................................. 3
Music Performance 380, 381 (Piano) ......................... 2,2
1Music Ensemble .............................................. 1,1
Music General 200 ............................................. 0,0
Music General 301 ............................................. 0
Music Education 310, 320 ...................................... 3,2
Music Performance 155, 156 or Music Voice 110,120 .......... 1,1
1Religious Studies .............................................. 3

Senior
1Natural Sciences* ............................................. 4,3
1Communicating Orally* ...................................... 3
Music Keyboard 410 .......................................... 2
Music Keyboard 420 or 430 ................................... 3
Music General 495 ............................................. 3
Music Performance 155, 156 or 255, 256 (Voice) ........... 1,1
Music Performance 480, 481 (Piano) ......................... 2,2
1Music Ensemble .............................................. 1,1
Music General 200 ............................................. 0,0
Music General 401 ............................................. 0
Electives ......................................................... 1

Total 120

*Meets University General Education Requirement.
1Piano majors take 4 hours of Music Ensemble 399 and 4 hours of Music Ensemble 380, 383, or 389.
2See Quantitative Reasoning list – University General Education Requirement. Select two courses from the list.
3See Social Sciences list – University General Education Requirement.
5See Natural Sciences – University General Education Requirement. Select two courses from the list. At least one of the courses must have a laboratory.
6See Communicating Orally – University General Education Requirement. Select one course from the list.
7See Religious Studies – University General Education Requirement. Select one course from the list.

Requirements for the Bachelor of Music • Music Major • Sacred Music Concentration • Voice Track

Freshman

English 101*, 102* ........................................... 3,3
Music Theory 110, 120 ........................................ 3,3
Music Theory 130, 140 ........................................ 1,1
Musicology 110* ................................................ 3
Music Performance 155 (Voice) ............................... 2,2
Music Ensemble .............................................. 1,1
1Music Performance ........................................... 1,1

Sophomore

Music Theory 210, 220 ........................................ 3,3
Music Theory 230, 240 ........................................ 1,1
Musicology 210*, 220* ........................................ 3,3
1Music Performance ........................................... 1,1
Music Ensemble .............................................. 1,1
Music Performance 255 ........................................ 2,2
Music Voice 425 ............................................... 3
Music General 200 ............................................. 0,0

Junior

1Social Sciences* ............................................. 3,3
Musicology 380* ............................................... 3
Music Theory 310 ............................................... 3
Musicology 480 ................................................. 3
Music Performance 355 ........................................ 2,2
Music Ensemble .............................................. 1,1
Music General 200 ............................................. 0,0
Music General 301 ............................................. 0
Music Education 310, 320 ...................................... 3,2
1Communicating Orally* ...................................... 3

Senior

1Quantitative Reasoning* ...................................... 3,3
Music Performance 455 ........................................ 2,2
Music Ensemble .............................................. 1,1
Music General 200 ............................................. 0,0
Music General 495 ............................................. 3
Music Voice 580-585 .......................................... 2,2
Music Voice 450-460 .......................................... 2,1
Music General 401 ............................................. 0
1Religious Studies .............................................. 3
Electives ......................................................... 2

Total 120

*Meets University General Education Requirement.
1Class Piano (Music Keyboard 110-120, 210-220) or Organ (Music Performance 190).
2See Natural Sciences – University General Education Requirement. Select two courses from the list. At least one of the courses must have a laboratory.
3See Social Sciences list – University General Education Requirement. Select two courses from the list.

Requirements for the Bachelor of Music • Music Major • Strings Concentration

Freshman

English 101*, 102* ........................................... 3,3
Music Theory 110, 120 ........................................ 3,3
Music Theory 130, 140 ........................................ 1,1
Musicology 110* ................................................ 3
Music Performance (100 level) ................................ 3,3
Music Keyboard 110, 120 ..................................... 1,1
Music Ensemble .............................................. 1,1
Music General 200 ............................................. 0,0
1Natural Sciences* ............................................. 4

Sophomore

Music Theory 210, 220 ........................................ 3,3
Music Theory 230, 240 ........................................ 1,1
Musicology 210*, 220* ........................................ 3,3
Music Keyboard 210, 220 ................................... 1,1
Musicology 380*  . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .3
Music Jazz 310  . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .3
Music Theory 310  . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .3
Junior
Music Theory 310  . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .3
Music Theory 420  . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .3
Musicology 380*  . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .3
Music Performance (300 level)  . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .3
Music Ensemble 370  . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .1,1
Music General 200  . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .0,0
"Cultures and Civilizations*"  . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .3,3
Senior
Music Performance (400 level)  . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .3
Music Instrumental 340, 350  . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .3
Music Ensemble 370  . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .1,1
"Quantitative Reasoning*"  . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .3
Music General 200  . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .0,0
Music General 401  . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .0
"Natural Sciences*"  . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .3,3
Electives  . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .7

*Meets University General Education Requirement.
1See Natural Sciences – University General Education Requirement. Choose two courses from the list. At least one of the courses must have a laboratory.
2See Social Sciences – University General Education Requirement. Select two courses from the list or two courses in a foreign language at the intermediate level.
3See Communicating Orally – University General Education Requirement. Select one course from the list.
4See Quantitative Reasoning list – University General Education Requirement. Select two courses from the list or two courses in a foreign language at the intermediate level.

Requirements for the Bachelor of Music • Music Major • Theory/Composition Concentration

Freshman  Hours Credit
English 101*, 102*  . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .3
Music Theory 110, 120  . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .3
Music Theory 130, 140  . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .1,1
Musicology 110*  . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .3
Musicology 350  . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .3
Music Jazz 110  . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .2
Music Jazz 130, 140  . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .1,1
Music Performance (100 level)  . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .2,2
Music Ensemble  . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .1,1
Music General 200  . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .0,0

Sophomore
Music Theory 210, 220  . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .3
Music Theory 230, 240  . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .1,1
Musicology 210*, 220*  . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .3
Music Jazz 120  . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .2
Music Jazz 210, 220  . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .2,2
Music Performance (200 level)  . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .2,2
Music Ensemble  . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .1,1
Music General 200  . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .0,0
Music Theory 340*  . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .3
"Social Sciences*"  . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .3,3

Junior
Music Theory 310  . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .3
Music Jazz 310  . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .2
Music Jazz 320  . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .2
Musicology 380*  . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .3
### Requirements for the Bachelor of Music • Music Major

#### Voice Concentration

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<th>Course</th>
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<td>Musicology 110*</td>
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<tr>
<td>Music Performance 155</td>
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<td>Music General 200</td>
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<td>Music Keyboard 110, 120</td>
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<td>Foreign Language</td>
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<td>Music Performance 255</td>
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<td>Music Keyboard 210, 220</td>
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<tr>
<td>Musicology 380*</td>
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<tr>
<td>Foreign Language</td>
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<tr>
<td>Social Sciences*</td>
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<tr>
<td>Music Theory 310</td>
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<td>Music Performance 355</td>
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<td>Music Ensemble</td>
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<td>Music General 200</td>
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<td>Music General 301</td>
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<td>Natural Sciences*</td>
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<tr>
<td>Music Education 310</td>
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<td><strong>Senior</strong></td>
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<td>Music Voice 410, 420</td>
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<td>Music Voice 450, 460</td>
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<td>Music General 200</td>
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<td>Music General 401</td>
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#### Social Sciences*

<table>
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<tr>
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<td>Communicating Orally*</td>
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<tr>
<td>Quantitative Reasoning</td>
<td>3</td>
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</tbody>
</table>

Total 120

*See University General Education Requirement.

1. See Social Sciences – University General Education Requirement. Select two courses from the list. At least one of the courses must have a laboratory.

2. See Course from the list.

### Woodwind, Brass, and Percussion Instruments Concentration

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Freshman</strong></td>
<td></td>
</tr>
<tr>
<td>English 101*, 102*</td>
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<tr>
<td>Music Theory 110, 120</td>
<td>3.3</td>
</tr>
<tr>
<td>Music Theory 130, 140</td>
<td>1.1</td>
</tr>
<tr>
<td>Musicology 110*</td>
<td>3</td>
</tr>
<tr>
<td>Music Performance 155</td>
<td>3.3</td>
</tr>
<tr>
<td>Music Ensemble</td>
<td>1.1</td>
</tr>
<tr>
<td>Music Keyboard 110, 220</td>
<td>1.1</td>
</tr>
<tr>
<td>Social Sciences*</td>
<td>3</td>
</tr>
<tr>
<td>Music General 200</td>
<td>0</td>
</tr>
<tr>
<td>Music General 301</td>
<td>0</td>
</tr>
<tr>
<td>Natural Sciences*</td>
<td>4.3</td>
</tr>
</tbody>
</table>

Total 120

*See University General Education Requirement.

1. See Social Sciences – University General Education Requirement. Select two courses from the list. At least one of the courses must have a laboratory.

2. See Course from the list.

### Additional Requirements

- **Senior**
  - Music Education 310: 3
  - Music Electives: 4
  - Music Performance (400 level): 3.3
  - Music Ensemble: 1.1
  - Music General 200: 0.0
  - Music General 401: 0

Total 120

*See University General Education Requirement.

1. See Social Sciences – University General Education Requirement. Select two courses from the list. At least one of the courses must have a laboratory.

2. See Course from the list.

---

*Meets University General Education Requirement.

1. Consult with a voice concentration advisor for appropriate language concentrations.

2. See University General Education Requirement.

3. See Social Sciences – University General Education Requirement. Select two courses from the list. At least one of the courses must have a laboratory.

4. See Communicating Orally – University General Education Requirement. Select one course from the list.

5. See Quantitative Reasoning – University General Education Requirement. Select two courses from the list.
**BACHELOR OF ARTS DEGREE**

**MUSIC MAJOR**

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.

**Requirements Bachelor of Arts • Music Major**

<table>
<thead>
<tr>
<th>Prerequisites</th>
<th>Hours</th>
<th>Credit</th>
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</thead>
<tbody>
<tr>
<td>Music Theory 110, 120</td>
<td>3,3</td>
<td></td>
</tr>
<tr>
<td>Music Theory 130, 140</td>
<td>1,1</td>
<td></td>
</tr>
<tr>
<td>Music Performance (100 level)</td>
<td>1,1</td>
<td></td>
</tr>
</tbody>
</table>

**Courses toward the major**

| Music Theory 210, 220                              | 3,3   |        |
| Music Theory 230, 240                              | 1,1   |        |
| Musicology 110*                                    | 3     |        |
| Musicology 210*, 220*                              | 3,3   |        |
| Music Ensemble                                     | 1,1,1,1                                 |
| Music Theory 310                                   | 3     |        |
| Musicology 350 or 380                              | 3     |        |
| Music Electives                                    | 0-3   |        |

**Total 45-48**

This degree requires a minimum of 120 hours as structured by the requirements outlined for the Bachelor of Arts degree with the College of Arts and Sciences. See the Undergraduate Catalog for further details.

1Students must complete a minimum of four semesters of Music Performance at the 200 level or above.

2Music General 200 must be completed a minimum of four semesters.


4Select from: Music General 301(0), 411(0); Music Theory 493 (3); Musicology 460 (3), 493 (5).

**Music and Culture Concentration**

**Requirements Bachelor of Arts • Music Major • Music and Culture Concentration**

<table>
<thead>
<tr>
<th>Prerequisites</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Music Theory 110, 120</td>
<td>3,3</td>
<td></td>
</tr>
<tr>
<td>Music Theory 130, 140</td>
<td>1,1</td>
<td></td>
</tr>
<tr>
<td>Musicology Course (100 level)</td>
<td>3</td>
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<tr>
<td>Intro Culture Course (100 level)</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

**Courses toward the major**

| Music Theory 210                                   | 3     |        |
| Music Theory 230                                   | 1     |        |
| Music Jazz 110 or Music Theory 220                 | 2,3   |        |
| Music Performance (100 level)                      | 1,1   |        |
| Music General 200                                 | 0,0   |        |
| Music Ensemble                                      | 1,1   |        |
| Performance Experience                             | 2     |        |
| Musicology 210, 220                                | 3,3   |        |
| Musicology 290                                     | 3     |        |
| Musicology 380                                     | 3     |        |
| Musicology Elective (300 level or above)           | 3,3   |        |
| Interdisciplinary Elective                          | 3     |        |

**Total 47-48**

This degree requires a minimum of 120 hours as structured by the requirements outlined for the Bachelor of Arts degree with the College of Arts and Sciences. See the Undergraduate Catalog for further details.

1To be chosen from Anthropology 130, Sociology 120, Asian Studies 101 or 102, Religious Studies 101 or 102, or by approval of musicology faculty.

2To be chosen from Music Performance 100 level or above; Music Education 260 or 310; Music Jazz 130, 160 or 210; Music Keyboard 110, 230; Music Voice 110; Dance 210, 220, 230, or 240.

3To be chosen from Musicology 310, 330, 350, 410, 420, 430, 450, 460, or 493.

4To be chosen from African and African-American Studies 201, 202, 235 or 226; Comparative Literature 202 or 203; History 255 or 256; Global Studies 250; Latin American Studies 251 or 252; Medieval Studies 201 or 202; Religious Studies 232 or 301; Sociology 232 or 250; Women’s Studies 220, or by approval of musicology faculty.

**Minor in Music**

- Minor concentration in applied music consists of 17 hours in courses numbered 200 and above, distributed as follows: Musicology 200, eight hours in applied music, and six 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 musicology consists of 17 hours in courses numbered 200 and above, distributed as follows: Musicology 200, nine hours in musicology and literature courses, and five hours in music electives. Prerequisites are Music Theory 100 or equivalent and two semesters of applied music study at the 103-190 levels.

**Department of PHILOSOPHY**

http://web.uth.edu/~philosophy/

John R. Hardwig, Head

**Professors**

<table>
<thead>
<tr>
<th>Name</th>
<th>Institution</th>
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<tbody>
<tr>
<td>Aquila, R.E., PhD</td>
<td>Northwestern</td>
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<tr>
<td>Cohen, S.M., PhD</td>
<td>Northwestern</td>
</tr>
<tr>
<td>Graber, G.C., PhD</td>
<td>Michigan</td>
</tr>
<tr>
<td>Hardwig J.R., PhD</td>
<td>Texas</td>
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<tr>
<td>Holt, J.E., PhD</td>
<td>Ohio State</td>
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<tr>
<td>Postow, B.C., PhD</td>
<td>Yale</td>
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**Associate Professors**

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<th>Name</th>
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<tr>
<td>Bohstedt, K.E., PhD</td>
<td>Ohio State</td>
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<tr>
<td>Hamlin, H.P., PhD</td>
<td>Georgia</td>
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**Assistant Professors**

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<th>Name</th>
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<tr>
<td>Arnold, D., PhD</td>
<td>Minnesota</td>
</tr>
<tr>
<td>Davis, J.K., JD, PhD</td>
<td>Washington</td>
</tr>
<tr>
<td>Douglas, H., PhD</td>
<td>Pittsburgh</td>
</tr>
<tr>
<td>Reidy, D.A., JD, PhD</td>
<td>Kansas</td>
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</tbody>
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**Adjunct Faculty**

<table>
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<tr>
<th>Name</th>
<th>Institution</th>
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<tr>
<td>Gale, R.M., PhD</td>
<td>New York</td>
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</table>

Philosophy as a discipline, in western civilization, has its roots in the thought of ancient Greece, which posed three questions which philosophers have ever since attempted to answer: (1) What is real? (2) How do we know? (3) What should we do? (metaphysics, epistemology, ethics, respectively). The department’s program is designed to introduce students to this rich tradition of thought and speculation. Such an introduction will provide them with an understanding of the development of the thought of their civilization and thus prepare them to participate thoughtfully and critically in our complex, modern society. Students taking philosophy courses will develop skills in critical thinking, argumentation, reading, and writing.
PHILOSOPHY MAJOR

- Prerequisites—three hours of logic, normally 130 or 135.
- Requirements – 24 hours of courses numbered 200 or above, including 3 hours of ethics (normally 340 or 440) and 6 hours in the history of philosophy, 3 hours in ancient (normally 320), and 3 hours in modern (normally 324). Majors are required to discuss their program 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.

Department of PHYSICS AND ASTRONOMY

http://www.phys.utk.edu/

Soren P. Sorensen, Head

Professors

Barnes, F.E. (Joint Faculty), PhD .................................................California
Bingham, C.R., PhD .........................................................Tennessee
Blass, W.E., PhD ..........................................................Michigan State
Breimig, M.J., PhD .............................................................Oregon
Callcott, T.A., PhD .........................................................Purdue
Childers, R.W., PhD ............................................................Vanderbilt
Compton, R.N., PhD ..........................................................Tennessee
Crater, H.W. (UTSI), PhD ....................................................Yale
Dagotto, E.R. (Distinguished Professor), PhD .................Bariloche (Argentina)
Duckett, K.E., PhD .............................................................Tennessee
Eguiluz, A.G. (Joint Faculty), PhD ...........................................Brown
Elston, S.B., PhD .............................................................Massachusetts
Georghiou, S., PhD ............................................................Manchester (UK)
Greene, G.L. (Joint Faculty), PhD ........................................Harvard
Guidry, M.W., PhD .............................................................Tennessee
Handler, T., PhD ..........................................................Rutgers
Kamyshkov, I., PhD ...........................................................ITEP (Russia)
Levin, J.C., PhD ..............................................................Oregon
Lewis, J.W.L. (Distinguished Professor, UTSI), PhD ..........Mississippi
Mack, J. (Distinguished Professor), PhD .........................Rensselaer Polytechnic Institute
Moreo, A. (Joint Faculty), PhD ........................................Bariloche (Argentina)
Nazarowicz, W., PhD .............................................................Warsaw
Painter, L.R., PhD ..........................................................Tennessee
Pegg, D.J., PhD .............................................................New Hampshire
Plummer, E.W. (Distinguished Professor), PhD .................Cornell
Quinn, J.J. (Lincoln Chair), PhD ...........................................Maryland
Riedinger, L.L., PhD ............................................................Vanderbilt
Shih, C.C., PhD ..............................................................Cornell
Sorensen, S.P., PhD ..........................................................Copenhagen (Denmark)
Thompson, J.R., PhD ............................................................Duke
Weitering, H.H. (Joint Faculty), PhD ..............................Groningen
Zhang, Z. (Joint Faculty), PhD ...........................................Copenhagen (Denmark)

Associate Professors

Dai, P., PhD .................................................................Missouri
Davis, L. (UTSI), PhD ........................................................Auckland
Dean, D.J., PhD .............................................................Vanderbilt
Efremenko, Y.Y., PhD ...........................................................ITEP (Russia)
Parigger, C. (UTSI), PhD .....................................................New Zealand
Read, K.F. (Joint Faculty), PhD ...........................................Cornell
Stiopis, G., PhD ..............................................................California Institute of Technology

Assistant Professors

Barzykin, V., PhD .........................................................Illinois-Urbana (Champaigne)
Grzywacz, R., PhD ...............................................................Warsaw
Papenbrock, T.F. (Joint Faculty), PhD ..............................Heidelberg
Spanier, S.M., PhD ...............................................................Mainz

Director of Undergraduate Laboratories

Parks, J.E., PhD .................................................................Kentucky

Physics is the study of matter and energy and their interactions from microscopic to macroscopic regimes. It is the most fundamental physical science in the sense that the laws of physics form the foundation of all natural sciences. The undergraduate physics major provides a thorough introduction to the core areas of physics while offering students flexibility to pursue special interests through our academic, applied, or general concentrations. The academic concentration is intended for students interested in professional employment or graduate work in physics or closely related fields such as astronomy, engineering, laser technology, or computational science. The applied concentration introduces students to the physics and technology of today and tomorrow. Such a broad physics background is increasingly useful in technological and industrial fields outside of physics. The general concentration is intended for students who wish to apply a substantial knowledge of physics to fields such as secondary education, medicine, law, journalism, business, or any field of their choice.

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.

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.

Honors Academic and Honors Applied Concentrations

Students who complete all requirements for the academic or applied concentrations will be awarded a degree with Honors if their university-wide GPA is at least 3.0, their GPA in 300- and 400-level mathematics and physics courses is at least 3.5, and they complete a written senior thesis reporting results of research conducted under faculty supervision and defended before a committee of three physics faculty members. A minimum of three credit hours of Physics 493 is required.
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 311-312, and 421.

Department of POLITICAL SCIENCE

http://web.uky.edu/~polisci/

David L. Feldman, Head

Professors

Cunningham, R.B., PhD ......................................................... Indiana
Feldman, D.L., PhD ................................................................. Missouri
Fitzgerald, M.R., PhD ........................................... Oklahoma
Folz, D.H., PhD ................................................................. Tennessee
Freeland, P.K., PhD ............................................................... Wisconsin
Grant, M.M., PhD ................................................................. Michigan State
Gorman, R., PhD ................................................................. New York
Lyons, W., PhD .............................................................. Oklahoma
Scheb, J.M., PhD ................................................................. Florida
Stephens, Jr., O.H. (Alumni Distinguished Service Professor), PhD ..................................................................... Johns Hopkins
Tonn, B., PhD ............................................................... Northwestern
Zhong, Y., PhD ................................................................. Kentucky

Associate Professors

Houston, D.J., PhD ........................................... State University of New York (Binghamton)
Nownes, A.J., PhD ......................................................... Kansas

Assistant Professors

Caprio, M., PhD .......................................................... Connecticut
Carcieri, M., PhD .................................................. California (Santa Barbara)
Carroll, D., PhD ............................................................... Wisconsin (Milwaukee)
Down, I., PhD .............................................................. North Carolina
Jepson, E., PhD ................................................................. Wisconsin
Morgan, A., PhD ............................................................. 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 post-graduate 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.

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, 365, 451, 452, 454, 456, 459, 461, and 463
- International Relations: 365, 366, 370, 470, 471, 473, and 474
- 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 3.3 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 coursework 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.
PSYCHOLOGY MAJOR

Prerequisites are one year of a biological science (e.g., Biology 101-102), Psychology 110 with a grade of C or better, and a GPA of at least 2.00.

The major consists of 24 hours of Psychology at the 200 level or higher.

- either Psychology 295 or Psychology 395 (prerequisites to Psychology 395 are Psychology 385 or Statistics 201 or Mathematics 115)
- three courses from Psychology 210, 220, 300, 310, 320, 330, 360, 370
- two additional psychology courses at the 300 level or higher
- two additional psychology courses at the 400 level

No more than six hours of 399, 489, 491, 492, 493 may be used in this major. Continuation in the psychology major requires maintenance of a GPA of 2.00. Students placed 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.)

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

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.

**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 (seminary, law, medicine) which recommends a specific course of undergraduate study. A faculty member in religious studies will assist a student to formulate this concentration. The student-initiated concentration 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.

**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 minor 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/

R. Scott Frey, Head

**Professors**

Frey, R.S., PhD ..............................................................Colorado State
Hastings, D.W., PhD .......................................................Massachusetts
Jalata, A., PhD .............................................................State University of New York (Binghamton)
Shover, N.E., PhD ..........................................................Illinois (Urbana)

**Associate Professors**

Cable, S., PhD ..............................................................Pennsylvania State
Dahms, H., PhD .............................................................New School for Social Research
Jones, R.E., PhD .............................................................Washington State

Kurth, S.B., PhD ..............................................................Illinois (Chicago)
Shefner, J., PhD .............................................................California (Davis)

**Assistant Professors**

Bui, H., PhD ..............................................................Michigan State
Gulick, J., PhD ..............................................................California (Santa Cruz)
Presser, L., PhD .............................................................Cincinnati

The undergraduate program curriculum emphasizes the theme of social justice. Through coursework in the interest areas of criminal justice, political economy, social psychology and environmental issues and globalization, students develop an understanding of everyday social behavior as well as the structural factors that contribute to inequalities across various status hierarchies such as race, ethnicity, class, gender, age and lifestyle. Students also 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 Sociology 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 of study for the major. Prerequisites to the major are three lower-division hours in sociology (either 110 or 120 or their honors equivalent) and Statistics 201. The major consists of 27 upper-division hours in sociology and must include 321 and 331 and at least two 400-level courses.

**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; one of the five following courses 452, 453, 455, 459, 495; and three courses selected in consultation with 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**

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) and Statistics 201.

**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 and Statistics 201.
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, 474, 475, Mathematics 423, 424, 425
• Mathematics 141-142 and 241-251, or upper-division Mathematics
• 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

Minor in Statistics
The minor consists of Statistics 201 or Statistics 251; an additional 12 hours from Statistics 320, 330, 365, 471, 472, 473, 474, 475; and Mathematics 423, 424, 425.

Department of THEATRE
http://theatre.utk.edu

Bill Black, Interim Head

Professors
Black, W.R., MFA .........................................................Illinois
Custer, M., MFA .......................................................Wisconsin

Associate Professors
Diamond, J., MFA .......................................................New York
Gould, B.K.A., MFA ..................................................Catholic
Van den Berg, K., PhD .............................................Indiana
Weber, T., MFA ........................................................Alabama

Assistant Professors
Campelli, J., MFA .........................................................Penn State
Sams, J., MFA ..........................................................Penn State
Yeager, K., BFA ........................................................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 220, 242, 252, 262, 300, 411, 412, 430 and 12 additional hours of theatre courses numbered 200 and above, 3 of which may be in cognate courses 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.
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, 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 nine hours in their collateral area (with the exception of economics and statistics majors, who complete 18 hours in their major and six 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.

Residency Requirement for Major Coursework

College of Business Administration students are required to take 18 of the 24 major hours (75 percent) in residence at the University of Tennessee, Knoxville. This 24-hour major requirement includes all major, collateral, and/or dual concentration coursework.

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.

**Minor in Business Administration**

The College of Business Administration also offers a minor for students pursuing majors in colleges other than the College of Business Administration. Students must successfully complete the following requirements.

- Accounting 200 3
- Economics 201 4
- Statistics 201 3
- Business Administration 201 4
- Finance 301 3
- Marketing 300 3
- Management 300 3

**Total 23**

All upper-division (300-level or above) coursework must be taken at the University of Tennessee, Knoxville. 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.) 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, Knoxville’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 Corporate Governance Center, 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, Knoxville, students will be able to use their laptop almost anywhere on campus.

**The Global Initiative**

Seeking to instill a global perspective in all of its students, the College of Business Administration challenges under-
graduate 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 410 Aconda Court, 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 Programs Office

The mission of the Undergraduate Programs Office is to provide excellent academic and educational program planning services to undergraduate students in the College of Business Administration. The Undergraduate Programs Office, 112 Aconda Court, 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 and through faculty mentors when students are admitted to a major.

In addition to advising, the Undergraduate Programs 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 Programs Office the semester a student completes the following coursework.

Mathematics 125, 123, or 141-142 (6 or 8 hours); Written Communication (3 hours from English 255, 295, or 355); Accounting 200 (3 hours); Economics 201 (4 hours); Statistics 201 (3 hours); 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, Knoxville.

Only in unusual cases will an application be considered after 75 hours of completed coursework. Progression standards are subject to change. Current standards are always available in the Undergraduate Programs Office, 112 Aconda Court.

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 Programs Office, 112 Aconda Court.

Transfer Students within the University of Tennessee, Knoxville, and from Other Institutions

Students in other colleges at the University of Tennessee, Knoxville, or from other institutions should apply for progression 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, Knoxville, 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 Programs Office, 112 Aconda Court.

Articulation Agreements

The College of Business Administration has special transfer articulation agreements with some Tennessee community colleges, leading to admission with junior standing in particular majors at the University of Tennessee, Knoxville. Students are awarded an associate’s degree by the specified community college and a baccalaureate degree by the University of Tennessee, Knoxville, 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, Knoxville, 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.

Department of ACCOUNTING AND INFORMATION MANAGEMENT

http://bus.utk.edu/acct

Daniel P. Murphy, Head

Professors

Anderson, K.E. (Pugh and Company Professor), PhD, CPA .................Indiana
Carcello, J.V. (William B. Stokely Distinguished Scholar),
PhD, CPA, CMA, CIA .................................................................Georgia State
Fisher, B.D., LLM ..............................................................George Washington
Kiger, J.E. (Warren L. Slagle Professor), PhD, CPA .........................Missouri
Murphy, D.P. (Deloitte & Touche Professor), PhD, CPA .............North Carolina
Reeve, J.M. (William and Sara Clark Professor of Enterprise Information Management), PhD, CPA ...........................................Oklahoma State
Roth, H.P., PhD, CPA, CMA .....................................................Virginia Tech
Stanga, K.G (Andersen Professor), PhD, CPA .............................Louisiana State
Williams, J.R. (Dean and Ernst & Young Professor), PhD, CPA .......Arkansas

Associate Professors

Behn, B.K. (William B. Stokely Distinguished Scholar),
PhD, CPA ..................................................................................Arizona State
Townsend, R.L. (Accounting Excellence Teaching Scholar),
PhD, CPA ..........................................................Texas
Woodroof, J.B., PhD, CPA ......................................................Texas Tech

Assistant Professors

DeVries, D.D., PhD, CPA, CISA ...........................................Arizona State
Pennington, R.R., PhD, CPA ....................................................South Carolina

Lecturers

Anderson, E.B., MAcc, CPA ......................................................Tennessee
Gilbert, P.S., MS ......................................................................Tennessee
Hendrick, L.W., MBA, JD, CPA ..............................................Houston
Hollander, A.S. (Reagan Faculty Scholar), PhD ............................Tennessee
Hughes, H.N., BS ........................................................................Tennessee
Reeves, L.M., MAcc, CPA .....................................................Tennessee
Valades, K.L., MAcc ............................................................Tennessee

ACCOUNTING MAJOR

The University of Tennessee, Knoxville, accounting program has established itself as one of the nation’s top accounting schools. Modern society demands much from professional accountants. They are responsible for preparing and analyzing financial information as well as consulting in many areas such as assurance services, information systems, and taxation. After completing the core requirements for a business education, the accounting major pursues courses in financial and managerial accounting, information management, auditing, and taxation. The accounting program emphasizes the use of computers. The accounting major must select a collateral from one of the following areas: finance, information management, international business, or logistics.

The University of Tennessee, Knoxville, accounting program is accredited by AACSB International and was among the initial programs in the nation to receive this accreditation. Since 1993, the state of Tennessee has required anyone wishing to take the Uniform Certified Public Accountant (CPA) Examination to complete 150 semester hours of study. Students who desire to become CPAs are encouraged to continue their formal education in the one-year Master of Accountancy program, which is described in the Graduate Catalog.
BUSINESS STUDIES MAJOR
(Interdepartmental Program)

The business studies major is an interdepartmentally designed major that delivers a broad educational perspective. Beyond the business core, students take specifically selected courses from all college disciplines: accounting, information management, economic theory, financial investments or markets, human resources, operations, marketing, and statistics. This comprehensive approach provides the student with a solid base of knowledge well suited for entry-level positions or individuals with an entrepreneurial spirit. Business studies majors are also well prepared for entrance into a variety of professional schools such as law, medicine, or business administration.

Requirements for the Bachelor of Science in Business Administration • Business Studies Major

Freshman Hours Credit
1\(^{\text{st}}\) Written Communication: English 101*, 102* ........................................ 6
1\(^{\text{st}}\) Quantitative Reasoning: Mathematics 123*-125* or 141*-142* ......... 6 or 8
Cultures and Civilizations: Intermediate Foreign Language* ....................... 6
Natural Sciences* ....................................................................................... 6 or 8
Social Sciences* ....................................................................................... 3
Oral Communication: Communication Studies 210* or 240* ................. 3
Business Administration 101 ................................................................. 1

Sophomore
Accounting 200 (Honors 207) ................................................................. 3
Social Sciences: Economics 201* (Honors 207*) .................................. 4
Written Communication: English 255*, 295*, or 355* ....................... 3
Ethics: Philosophy 243, 244, or 443 ......................................................... 3
Statistics 201 (Honors 207) ................................................................. 3
Business Administration 201 ................................................................. 4
1\(^{\text{st}}\) Arts and Humanities* .................................................................... 6

Junior
Business Administration 331-332 .......................................................... 4
Business Administration 341-342 ............................................................ 4
Accounting 301 ....................................................................................... 3
Information Management 341 ............................................................... 3
Finance 301 .......................................................................................... 3
Business Administration 353 ................................................................. 3
Business Administration 361 ................................................................. 3
Accounting 311 ....................................................................................... 3
Accounting 321 ....................................................................................... 3
Accounting 411 ....................................................................................... 3
1\(^{\text{st}}\) Collateral ......................................................................................... 3

Senior
Accounting 414 or 431 ............................................................................. 3
Business Law 301 .................................................................................... 3
Cultures and Civilizations* .................................................................... 3
Management 401 ................................................................................... 3
1\(^{\text{st}}\) Collateral ......................................................................................... 6
Electives .................................................................................................... 6-10

Total 120

Accounting Collateral Options:
Finance: FIN 425; FIN 435; and FIN 455 or ACCT 414
Information Management: IM 342; IM 442; IM 443
International Business: ECON 329; BA 371; MGT 471
Logistics: LOG 310; LOG 411; LOG 421
*Meets University General Education Requirement.
1\(^{\text{st}}\) 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 Arts and Humanities requirement, the course may also be counted toward the Arts and Humanities requirement.
2\(^{\text{nd}}\) 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 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.
3\(^{\text{rd}}\) In the spring of their Junior year, students normally make the decision whether to enter the job market upon graduation or apply to the Master of Accountancy program. Accounting 414 and 431 are both prerequisites to the MAcc program; therefore, students planning to enter the MAcc program should take Accounting 414 or 431 (whichever was not taken to satisfy the Major requirement) instead of Finance 455 in the Finance collateral, instead of IM 442 in the Information Management collateral; instead of Management 471 in the International Business collateral, and instead of Logistics 421 in the Logistics collateral.

Total 120

*Meets University General Education Requirement.
1\(^{\text{st}}\) 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 Arts and Humanities requirement, the course may also be counted toward the Arts and Humanities requirement.
2\(^{\text{nd}}\) 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 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.
**Department of ECONOMICS**

http://econ.bus.utk.edu

Robert A. Bohm, Head
H.W. Herzog, Undergraduate Liaison

**Professors**
- Bohm, R.A., PhD .................................................................Washington (St. Louis)
- Chang, H.S., PhD ..............................................................Vanderbilt
- Clark, D.P. (Stokely Faculty Scholar), PhD ..............................Michigan State
- Fox, W.F. (William B. Stokely Distinguished Professor of Business), PhD .........................................................Ohio State
- Herzog, Jr., H.W. (George A. Spiva Scholar), PhD .......................Maryland
- McKee, M. (J. Fred Holly Chair of Excellence), PhD ...............Carlton (Canada)
- Murray, M.N. (Douglas A. and Brenda Home Professor), PhD ....Syracuse

**Associate Professor**
- Gauger, J.A., PhD .................................................................Iowa State

**Assistant Professors**
- Bruce, D., PhD .................................................................Syracuse
- Evans, M., PhD .................................................................Colorado
- Gilpatrick, S., PhD ..........................................................Texas A&M
- Mohsin, M., PhD ............................................................York (Canada)
- Munkin, M., PhD ..............................................................Indiana
- Santore, R., PhD .................................................................Ohio State
- Vossler, C., PhD .................................................................Cornell

**Research Associate Professor**
- Burton, M., PhD ...............................................................Tennessee

**Lecturers**
- Baker, K, PhD .................................................................New Mexico
- Bueckman, D., PhD ........................................................Tennessee
- Das, S., PhD .................................................................Vanderbilt
- Schuler, G., PhD ...............................................................Houston

**Emeriti Faculty**
- Davidson, P. (J. Fred Holly Chair of Excellence Emeritus), PhD ......Pennsylvania
- Moore, J.R. (Alumni Distinguished Service Professor Emeritus), PhD ..................Cornell
- Russell, M., PhD ..............................................................Oklahoma
- Spiva, Jr., G.A., PhD .........................................................Texas

**Adjunct Faculty**
- Bjornstad, David, PhD ......................................................Syracuse
- Curlee, T.R., PhD ..........................................................Purdue
- D’Urso, V.T., PhD .........................................................Massachusetts Institute of Technology
- Schriver, W.R., PhD ........................................................Tennessee
- Shelton, R.B., PhD ........................................................Southern Illinois
- Vogt, D.P., PhD ..............................................................Syracuse

**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.

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**Requirements for the Bachelor of Science in Business Administration • Economics Major • Traditional Option**

**Freshman**

- "Written Communication: English 101*, 102* ................................................6
- Quantitative Reasoning: Mathematics 123*-125* or 141*-142* .........................6 or 8
- Cultures and Civilizations: Intermediate Foreign Language* .............................6 or 8
- Natural Sciences* .....................................................................................................6 or 8
- Social Sciences* ........................................................................................................3
- Oral Communication: Communication Studies 210* or 240* .........................3
- Business Administration 101 ...................................................................................1

**Sophomore**

- Accounting 200 (Honors 207) ........................................................................3
- Social Sciences: Economics 201* (Honors 207*) ................................................4
- Written Communication: English 255*, 295*, or 355* ....................................3
- Ethics: Philosophy 243, 244, or 443 .....................................................................3
- Statistics 201 (Honors 207) .................................................................................3
- Business Administration 201 ...............................................................................4
- "Arts and Humanities* ............................................................................................6

**Junior**

- Business Administration 331-332 .....................................................................4
- Business Administration 341-342 .....................................................................4
- Finance 301 ..........................................................................................................3
- Economics 311 .......................................................................................................3
- Economics 313 .......................................................................................................3
- Business Administration 353 ...............................................................................3
- Business Administration 361 ...............................................................................3
- Economics Major Coursework .............................................................................6

**Senior**

- Business Law 301 ................................................................................................3
- Economics Electives (Four additional Economics courses) ................................12
- "Cultures and Civilizations* ..................................................................................3
- Management 401 ..................................................................................................3
- Electives ................................................................................................................9-13

Total 120

**Economics Major Coursework Options (choose one area of focus):**

- International Economics – ECON 321; ECON 323
- Industrial Organization – ECON 331; ECON 435
- Public Economics – ECON 471; ECON 472
- Quantitative Economics – ECON 381, ECON 482 (Math 141-142 prereq)
- Money/Macroeconomics – ECON 351; ECON 413
- Regional/Urban Economics – ECON 361; FIN 485
- Environmental Economics – ECON 462; Agricultural Economics 470 or Geology 455
- (Geology 101 prereq)
- Labor Economics – ECON 341; MGT 411
- Health Economics – ECON 436; Public Health 300

*Meets University General Education Requirement.
*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 Arts and Humanities requirement, the course may also be counted toward the Arts and Humanities requirement.
*Students studying into 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 studying into Mathematics 100, 113, 115, 117, 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.
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 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 • Collateral Option

Freshman

| Hours Credit |
|------------------|------------------|
| Written Communication: English 101* | 6 |
| Quantitative Reasoning: Mathematics 123*-125* or 141*-142* | 6 or 8 |
| Natural Sciences* | 6 or 8 |
| Social Sciences* | 6 |
| Oral Communication: Communication Studies 210* or 240* | 3 |
| Business Administration 101 | 1 |

Sophomore

| Hours Credit |
|------------------|------------------|
| Accounting 200 (Honors 207) | 3 |
| Social Sciences: Economics 201* (Honors 207*) | 4 |
| Written Communication: English 255*, 295*, or 355* | 3 |
| Ethics: Philosophy 243, 244, or 443 | 3 |
| Statistics 201 (Honors 207) | 3 |
| Business Administration 201 | 4 |
| Arts and Humanities* | 6 |

Junior

| Hours Credit |
|------------------|------------------|
| Business Administration 331-332 | 4 |
| Business Administration 341-342 | 4 |
| Finance 301 | 3 |
| Business Law 301 | 3 |
| Business Administration 353 | 3 |
| Business Administration 361 | 3 |
| Finance 425 | 3 |
| Finance 435 | 3 |
| Collateral | 6 |

Senior

| Hours Credit |
|------------------|------------------|
| Collateral | 3 |
| Finance 455 | 3 |
| Finance Electives | 6 |
| Cultures and Civilizations* | 3 |
| Management 401 | 3 |
| Electives | 9-13 |

Total 120

Finance Collateral Options:

- Accounting - ACC 301; ACC 321; and any one of ACC 311, IM 341, or ACC 431
- Economics - ECON 311; ECON 313; and choice of either ECON 321 or ECON 482 (Math 141-142 Prerequisite)
- Information Management - IM 341; IM 342; IM 442 or 443
- International Business - ECON 329; BA 371; MGT 471
- Logistics - LOG 310; LOG 411; LOG 421

*Meets University General Education Requirement.

**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 Arts and Humanities requirement, the course may also be counted toward the Arts and Humanities requirement.

Department of FINANCE

http://bus.utk.edu/finance

James W. Wansley, Head

Professors

- Black, H.A. (James F. Smith, Jr. Professor), PhD
- Boehm, T.P. (AmSouth Scholar), PhD
- DeGennaro, R.P. (SunTrust Professor), PhD
- Ehrhardt, M.C. (Paul and Beverly Castagna Professor in Investments), PhD
- Shriever, R.E. (William Voigt Professor), PhD
- Wachowicz, J.M. (AmSouth Scholar), PhD
- Wansley, J.W. (Clayton Homes Chair of Excellence), PhD
- Collins, M.C. (Home Federal Bank Fellow), PhD
- Daves, P.R., PhD
- Murphy, D.L.(Reagan Faculty Scholar), PhD
- Woidtke, T., PhD
- Murphy, S.P., MBA
- Sexton, L.S., MBA

Instructors

- Loyola
- Tennessee

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.


**Department of MANAGEMENT**

http://bus.utk.edu/mgt

William Q. Judge, Jr., Interim Head

**Professors**

Judge, W.Q. (Reagan Faculty Scholar), PhD ................................. North Carolina
Ladd, R.T. (Associate Dean), PhD .................................................. Georgia
Miller, A. (Associate Dean and William B. Stokely Chair of Management), PhD ........................................................ Washington
Neel, C.W. (William B Stokely Distinguished Professor in Corporate Governance), PhD ........................................................... Alabama
Rentsch, J.R., PhD ........................................................................ Maryland
Rush, M.C., PhD ......................................................................... Akron
Stahl, M.J. (William B. Stokely Distinguished Professor of Management), PhD ............................................................. Rensselaer Polytechnic Institute
Woehr, D.J., PhD ....................................................................... Georgia Institute of Technology

**Associate Professors**

Elenkov, D.S., PhD ....................................................................... Massachusetts Institute of Technology
Kupritz, W.V., PhD ...................................................................... Virginia Tech
Morris, M.L. (Stokely Faculty Scholar), PhD, CFLE ......................... Tennessee
Seal, I.E., PhD .............................................................................. Tennessee
Stout, V.J., EdD ............................................................................ Tennessee

**Assistant Professors**

Barley, S.J., PhD ........................................................................... Tennessee
Lim, D.H., PhD ........................................................................... Illinois
Pierce, R.H., PhD ......................................................................... Ohio State
Smith, A.D., PhD ........................................................................ North Carolina

**Lecturers**

Anderson, J.C., MIM ................................................................. Thunderbird
Atchley, E.K.P., PhD ................................................................. Tennessee
Lyle, L.G., PhD ........................................................................... Tennessee
Mackey, D.L., PhD ...................................................................... Tennessee
McIntyre, M.D., PhD ................................................................. Tennessee
Neubert, R.L., PhD ................................................................... Tennessee
Swift, G.D., MBA ........................................................................ Georgia State

**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 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.

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**Requirements for the Bachelor of Science in Business Administration • Human Resource Development Major • Collateral Option**

### Freshman Hours Credit

1. Written Communication: English 101*, 102* .................................................. 6
2. Quantitative Reasoning: Mathematics 123*-125* or 141*-142* ..................... 6 or 8
3. Cultures and Civilizations: Intermediate Foreign Language* ......................... 6
4. Natural Sciences* ......................................................................................... 6 or 8
5. Social Sciences* .......................................................................................... 3
6. Oral Communication: Communication Studies 210* or 240* ...................... 3
7. Business Administration 101 ........................................................................ 1

### Sophomore Hours Credit

1. Accounting 200 (Honors 207) ................................................................... 3
2. Social Sciences: Economics 201* (Honors 207*) ........................................ 4
3. Written Communication: English 255*, 295*, or 355* ............................... 3
4. Ethics: Philosophy 243, 244, or 443 .............................................................. 3
5. Statistics 201 (Honors 207) ........................................................................ 3
6. Business Administration 201 ..................................................................... 4
7. Arts and Humanities* .................................................................................. 6

### Junior Hours Credit

1. Business Administration 331-332 ................................................................ 4
2. Business Administration 341-342 ............................................................... 4
3. Finance 301 ................................................................................................ 3
4. Business Law 301 ....................................................................................... 3
5. Business Administration 353 ..................................................................... 3
6. Business Administration 361 ..................................................................... 3
8. Collateral ..................................................................................................... 3
9. Cultures and Civilizations* .......................................................................... 3

### Senior Hours Credit

1. Human Resource Development 440 ............................................................ 3
2. Human Resource Development 452 ............................................................ 3
3. Collateral ..................................................................................................... 6
4. Human Resource Development 479 ............................................................ 3
5. Human Resource Development 497 ............................................................ 3
6. Management 401 ....................................................................................... 3
7. Electives ...................................................................................................... 9-13

**Total 120**

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**Human Resource Development Collateral Options:**

- Information Management – IM 341; IM 342; IM 442 or 443
- International Business – ECON 329; BA 371; MGT 471

*Meets University General Education Requirement.

**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 Arts and Humanities requirement, the course may also be counted toward the Arts and 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, 113, 115, 117, 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 must take Mathematics 125 in the first semester of their Sophomore Year, prior to taking Mathematics 123.

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**Requirements for the Bachelor of Science in Business Administration • Human Resource Development Major • Dual Concentration with Management**

### Junior Hours Credit

1. Business Administration 331-332 ................................................................ 4
2. Business Administration 341-342 ............................................................... 4
3. Finance 301 ................................................................................................ 3
4. Business Law 301 ....................................................................................... 3

**Total 120**
Business Administration 353 .............................................. 3
Business Administration 361 .............................................. 3
Human Resource Development 340 ...................................... 3
Information Management 341 ............................................. 3
Cultures and Civilizations* .................................................. 3

Senior
Human Resource Development 440 ...................................... 3
Human Resource Development 452 ...................................... 3
Management 431 ............................................................. 3
Management 471 or 481 ..................................................... 3
Human Resource Development 455 ...................................... 3
Human Resource Development 479 ...................................... 3
Management 401 ................................................................ 3
Electives ............................................................................ 9-13

Total 120

*Meets University General Education Requirement.

MANAGEMENT MAJOR

Management majors may choose from several different areas of emphasis, including human resource development, information management, and international business. Operations management and human resource management are the most common selections, but an individualized program may be developed. The foundation is provided by studies of human behavior in organizations, effective team functioning, operational systems, international business, strategic leadership and organizational strategy. Career opportunities include staff positions within production planning, inventory management, and training and development. With respect to line positions, opportunities are available in entry-level managerial positions in all types of industries, including such industries as retail, banking, manufacturing, transportation, and hospitality. Many of our students find this major to be a useful springboard to postgraduate work as well.

Requirements for the Bachelor of Science in Business Administration • Management Major • Dual Concentration (Freshmen and Sophomore Years)

<table>
<thead>
<tr>
<th>Freshmen</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1  Written Communication: English 101*, 102* ........................................ 6</td>
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</tr>
<tr>
<td>3  Quantitative Reasoning: Mathematics 123*-125* or 141*-142* .......................... 6 or 8</td>
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</tr>
<tr>
<td>6  Cultures and Civilizations: Intermediate Foreign Language* .......................... 6</td>
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<tr>
<td>6  Natural Sciences* ........................................................................ 6 or 8</td>
<td></td>
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<tr>
<td>3  Social Sciences* ............................................................................. 3</td>
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<tr>
<td>3  Oral Communication: Communication Studies 210* or 240* .............................. 3</td>
<td></td>
</tr>
<tr>
<td>3  Business Administration 101 ................................................................. 1</td>
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</tbody>
</table>

**Sophomore**

<table>
<thead>
<tr>
<th>Sophomore</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>4  Accounting 200 (Honors 207) .............................................................. 3</td>
<td></td>
</tr>
<tr>
<td>4  Social Sciences: Economics 201* (Honors 207*) ..................................... 4</td>
<td></td>
</tr>
<tr>
<td>3  Written Communication: English 255*, 295*, or 355* ................................. 3</td>
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<tr>
<td>3  Ethics: Philosophy 243, 244, or 443 ...................................................... 3</td>
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<tr>
<td>3  Statistics 201 (Honors 207) ................................................................. 3</td>
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<tr>
<td>4  Business Administration 201 ................................................................. 4</td>
<td></td>
</tr>
<tr>
<td>6  Arts and Humanities* ........................................................................... 6</td>
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</tr>
</tbody>
</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 Arts and Humanities requirement, the course may also be counted toward the Arts and 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, 115, 117, 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.

Dual Concentrations

Requirements for the Bachelor of Science in Business Administration • Management Major • Dual Concentration with Human Resource Development

<table>
<thead>
<tr>
<th>Junior</th>
<th>Hours Credit</th>
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<tbody>
<tr>
<td>4  Business Administration 331-332 .......................................................... 4</td>
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<tr>
<td>4  Business Administration 341-342 .......................................................... 4</td>
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<tr>
<td>3  Finance 301 ......................................................................................... 3</td>
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<td>3  Business Administration 353 ................................................................. 3</td>
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<td>3  Business Administration 361 ................................................................. 3</td>
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<td>3  Human Resource Development 340 .......................................................... 3</td>
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<td>3  Operations and Management Science 341 ................................................. 3</td>
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<td>3  Management 401 ..................................................................................... 3</td>
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<tr>
<td>9-13 Electives .............................................................................................. 9-13</td>
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</table>

Total 120

*Meets University General Education Requirement.

Requirements for the Bachelor of Science in Business Administration • Management Major • Dual Concentration with Information Management

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<thead>
<tr>
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Total 120

*Meets University General Education Requirement.
## Requirements for the Bachelor of Science in Business Administration • Management Major • Dual Concentration with International Business

### Junior

<table>
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<td>Operations and Management Science 341</td>
<td>3</td>
</tr>
<tr>
<td>Cultures and Civilizations*</td>
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<tr>
<td>‘Economics 329</td>
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### Senior

<table>
<thead>
<tr>
<th>Course</th>
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<td>Business Law 301</td>
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<td>Management 431</td>
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<td>Human Resource Development 340</td>
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<td>‘Business Administration 371</td>
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<tr>
<td>Management 401</td>
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</table>

**Electives** ................................................................. 9-13

*Meets University General Education Requirement.

*Coursework for the International Business Dual Concentration may be substituted for a program of study as approved by an advisor.

## Department of MARKETING AND LOGISTICS

http://ml.bus.utk.edu

Robert B. Woodruff, Head

### Professors

- Barnaby, D.J., PhD ................................................. Purdue
- Cadotte, E.R., PhD ............................................... Ohio State
- Gardial, S.F. (Associate Dean and Stokely Faculty Scholar), PhD ... Michigan State
- Montzer, J.T. (Harry J. and Vivienne R. Bruce Chair of Excellence in Business), PhD ... Michigan State
- Schumann, D.W. (Taylor Professor in Business), PhD .......... Missouri
- Stank, T.P. (John H. Red Dove Professor of Logistics), PhD ...... Georgia
- Woodruff, R.B. (Proffitt’s, Inc. Professor of Marketing), DBA ...... Indiana

### Associate Professors

- Dabholkar, P.A., PhD .............................................. Georgia State
- Foggin, J.H., DBA .................................................. Indiana
- Holcomb, M.C., PhD ............................................... Tennessee
- Kahn, K.B., PhD ................................................... Virginia Tech
- Myers, M.B. (Reagan Faculty Scholar), PhD ..................... Michigan State
- Moon, M.A. PhD .................................................... North Carolina
- Reizenstein, R.C., PhD ............................................ Cornell
- Rentz, J.O., PhD ................................................... Georgia
- Rinehart, L.M., PhD ................................................ Tennessee

### Assistant Professors

- Esper, T.L., PhD .................................................... Arkansas
- Flint, D.J., PhD .................................................... Tennessee
- Sabin, F., PhD ....................................................... Texas A&M

### Emeriti Faculty

- Dieck, G.N., DBA ................................................... Indiana
- Mundy, R.A., PhD .................................................... Penn State

### Instructors

- Collins, M.E., MBA ............................................... Middle Tennessee State
- Dittmann, J.P., PhD ................................................ Missouri

## LOGISTICS 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.

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.

The internationally recognized logistics program at the University of Tennessee, Knoxville, 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.

### Requirements for the Bachelor of Science in Business Administration • Logistics Major • Collateral Option

#### Freshman

<table>
<thead>
<tr>
<th>Requirement</th>
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<tbody>
<tr>
<td>Written Communication: English 101*, 102*</td>
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</tr>
<tr>
<td>Quantitative Reasoning: Mathematics 123*, 125*</td>
<td>6</td>
</tr>
<tr>
<td>or 141*-142*</td>
<td>6 or 8</td>
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<tr>
<td>Cultures and Civilizations: Intermediate Foreign Language*</td>
<td>6</td>
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<tr>
<td>Natural Sciences*</td>
<td>3</td>
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<td>Social Sciences*</td>
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<td>Oral Communication: Communication Studies 210* or 240*</td>
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<tr>
<td>Business Administration 101</td>
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**Sophomore**

- Accounting 200 (Honors 207)                                               | 3     |
- Social Sciences: Economics 201* (Honors 207*)                              | 4     |
- Written Communication: English 255*, 295*, or 355*                        | 3     |
- Ethics: Philosophy 243, 244, or 443                                        | 3     |
- Statistics 201 (Honors 207)                                               | 3     |
- Business Administration 201                                               | 4     |

### Junior

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<td>Business Administration 361</td>
<td>3</td>
</tr>
<tr>
<td>Cultures and Civilizations*</td>
<td>3</td>
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<tr>
<td>Logistics 310</td>
<td>3</td>
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<tr>
<td>Collateral</td>
<td>3</td>
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<tr>
<td>Business Law 301</td>
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</tbody>
</table>

**Senior**

- Logistics 411                                                              | 3     |
- Logistics 421                                                              | 3     |
- Collateral                                                                 | 6     |
- Logistics 412 or 413                                                        | 3     |
- Logistics 460                                                              | 3     |
- Management 401                                                             | 3     |

**Electives** ........................................................................ 9-13

*Meets University General Education Requirement.

*Must be completed by the end of the Freshman Year.
Dual Concentrations

Requirements for the Bachelor of Science in Business Administration • Logistics Major • Dual Concentration with Information Management

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<tbody>
<tr>
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<td>Logistics 460</td>
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<td>Management 401</td>
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<tr>
<td>Electives</td>
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Total 120

*Meets University General Education Requirement.

Requirements for the Bachelor of Science in Business Administration • Logistics Major • Dual Concentration with International Business

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<td>9-13</td>
</tr>
</tbody>
</table>

Total 120
MARKETING MAJOR

Marketing in an organization has responsibility for identifying who customers are, what they need and want, and how best to meet those needs/wants by creating and delivering superior value to them. Marketing professionals use strategy tools to target customers, create value propositions and positioning for each target, and deliver and communicate value to these customers through product design, pricing, advertising, personal selling, promotion, and distribution.

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, 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.

Requirements for the Bachelor of Science in Business Administration • Marketing Major • Collateral Option

Freshman

<table>
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<tr>
<th>Course</th>
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<td>Written Communication: English 255*, 295*, or 355*</td>
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<td>Ethics: Philosophy 243, 244, or 443</td>
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Senior

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<tbody>
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<td>Collateral</td>
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Total 120

*Meets University General Education Requirement.

Marketing Collateral Options:

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<td>Information Management – IM 341; IM 342; IM 442 or 443</td>
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<tr>
<td>International Business – ECON 329; BA 371; MGT 471</td>
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<tr>
<td>Logistics – LOG 310; LOG 411; LOG 421</td>
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<tr>
<td>Resource Management – ACC 301; FIN 435; FIN 455</td>
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*Meets University General Education Requirement.

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Dual Concentrations

Requirements for the Bachelor of Science in Business Administration • Marketing Major • Dual Concentration with Information Management

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<td>Cultures and Civilizations*</td>
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<tr>
<td>‘Management 471</td>
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<tr>
<td>‘Business Administration 371</td>
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<td>‘Management 481</td>
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<tr>
<td>Management 401</td>
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</tr>
<tr>
<td>Marketing 460</td>
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<tr>
<td>Electives</td>
<td>.8-12</td>
</tr>
</tbody>
</table>

Total 120

*Meets University General Education Requirement.

**Requirements for the Bachelor of Science in Business Administration • Marketing Major • Dual Concentration with Logistics**

<table>
<thead>
<tr>
<th>Junior</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Administration 331-332</td>
<td>.4</td>
</tr>
<tr>
<td>Business Administration 341-342</td>
<td>.4</td>
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<tr>
<td>Finance 301</td>
<td>.3</td>
</tr>
<tr>
<td>Business Administration 353</td>
<td>.3</td>
</tr>
<tr>
<td>Business Administration 361</td>
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</tr>
<tr>
<td>Cultures and Civilizations*</td>
<td>.3</td>
</tr>
<tr>
<td>Marketing 340</td>
<td>.3</td>
</tr>
<tr>
<td>Business Law 301</td>
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<td>Logistics 310</td>
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<table>
<thead>
<tr>
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<th>Hours Credit</th>
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<tbody>
<tr>
<td>Marketing 350</td>
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<tr>
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<td>Logistics 411</td>
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<td>Logistics 421 or 413</td>
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<td>Management 401</td>
<td>.3</td>
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<tr>
<td>Marketing 460</td>
<td>.3</td>
</tr>
<tr>
<td>Logistics 460</td>
<td>.3</td>
</tr>
<tr>
<td>Electives</td>
<td>.8-12</td>
</tr>
</tbody>
</table>

Total 120

*Meets University General Education Requirement.

**Requirements for the Bachelor of Science in Business Administration • Public Administration Major (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 Master of Public Administration are two possible options.

**Requirements for the Bachelor of Science in Business Administration • Public Administration Major**

<table>
<thead>
<tr>
<th>Freshman</th>
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<tbody>
<tr>
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<tr>
<td>Quantitative Reasoning: Mathematics 123*–125* or 141*–142*</td>
<td>.6 or 8</td>
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<tr>
<td>Cultures and Civilizations: Intermediate Foreign Language*</td>
<td>.6</td>
</tr>
<tr>
<td>Natural Sciences*</td>
<td>.6 or 8</td>
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<tr>
<td>Social Sciences*</td>
<td>.3</td>
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<tr>
<td>Oral Communication: Communication Studies 210* or 240*</td>
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<tr>
<td>Business Administration 101</td>
<td>.1</td>
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<table>
<thead>
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<th>Hours Credit</th>
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<tbody>
<tr>
<td>Accounting 200 (Honors 207)</td>
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</tr>
<tr>
<td>Social Sciences: Economics 201* (Honors 207*)</td>
<td>.4</td>
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<tr>
<td>Written Communication: English 255*, 295*, or 355*</td>
<td>.3</td>
</tr>
<tr>
<td>Ethics: Philosophy 243, 244, or 443</td>
<td>.3</td>
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<td>Business Administration 201</td>
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<tr>
<td>Arts and Humanities*</td>
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<table>
<thead>
<tr>
<th>Junior</th>
<th>Hours 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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<td>Finance 301</td>
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<td>Political Science 340</td>
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<tr>
<td>Cultures and Civilizations*</td>
<td>.3</td>
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Economics 311 ......................................................... 3
Electives ................................................................... 3

Senior
Business Law 301 ..................................................... 3
Economics 471 .......................................................... 3
Economics 472 .......................................................... 3
Political Science 441 .................................................. 3
Management 401 ....................................................... 3
Electives or Political Science Electives ....................... 9

Total 120

*Meets University General Education Requirement.
1Must be completed by the end of the Sophomore 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 Arts and Humanities requirement, the course may also be counted toward the Arts and 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, 113, 115, 117, 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 Statistics 125.

Electives ................................. 6-10

STATISTICS MAJOR

The general perception of statisticians is most often associated with sporting events. The life of 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, Knoxville, will enable them to understand and convey the scope and power of statistical thinking—resulting in significant contributions toward solutions to a variety of important jobs. Well-paying jobs are available at the Bachelor of Science, Master of Science, and doctorate levels.

Requirements for the Bachelor of Science in Business Administration • Statistics Major • Collateral Option

<table>
<thead>
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<th>Freshman</th>
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<td>6 or 8</td>
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<tr>
<td>Cultures and Civilizations: Intermediate Foreign Language*</td>
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<tr>
<td>Natural Sciences*</td>
<td>6 or 8</td>
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<td>Social Sciences*</td>
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<tr>
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<table>
<thead>
<tr>
<th>Sophomore</th>
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<tbody>
<tr>
<td>Accounting 200 (Honors 207)</td>
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<tr>
<td>Social Sciences: Economics 201* (Honors 207*)</td>
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</tr>
<tr>
<td>Written Communication: English 255*, 295*, or 355*</td>
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<tr>
<td>Ethics: Philosophy 243, 244, or 443</td>
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<td>Business Administration 201</td>
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<tr>
<td>2Arts and Humanities*</td>
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<table>
<thead>
<tr>
<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>Finance 301</td>
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<td>Statistics 365</td>
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<td>Business Administration 361</td>
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<tr>
<td>Statistics 320</td>
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<td>Statistics 330</td>
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</table>
Statistics Electives ......................................................... 3
Collateral ................................................................. 3

Senior
Business Law 301 ......................................................... 3
Statistics 471 ............................................................... 3
Statistics Electives ......................................................... 3
Collateral ................................................................. 3
Cultures and Civilizations* ............................................. 3
Management 401* ......................................................... 3
Electives ................................................................. 9-13

Total 120

Statistics Collateral Options:
Economics – ECON 311 or ECON 313; ECON 381
Finance – FIN 425, and one of FIN 435, 455, 475, 485
Information Management – IM 341; IM 342
Logistics – LOG 310; LOG 411
Marketing – MKT 340; MKT 350
Operations Management – OMS 341; OMS 410 or 421

*Meets University General Education Requirement.

Statistics and Marketing Dual Concentration Options:
Business Administration 331-332 .................................... 4
Business Administration 341-342 .................................... 4
Finance 301 ............................................................... 3
Business Administration 353 ........................................... 3
Business Administration 361 ........................................... 3
Statistics 471 ............................................................... 3
Statistics Electives ......................................................... 3
Electives ................................................................. 9-13

Total 120

Statistics and Marketing Dual Concentration Options:
1) STAT 320; STAT 330; STAT 471; STAT 474 or 475
2) STAT 320; STAT 471; STAT 474; STAT 475

*Meets University General Education Requirement.

Requirements for the Bachelor of Science in Business Administration • Statistics Major • Dual Concentration with Marketing

Junior

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
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<tr>
<td>Business Administration 341-342</td>
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<td>Finance 301</td>
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<td>Statistics 365</td>
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<td>Business Administration 353</td>
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<tr>
<td>Business Administration 361</td>
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</tr>
<tr>
<td>Logistics 310</td>
<td>3</td>
</tr>
<tr>
<td>Statistics 320</td>
<td>3</td>
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<tr>
<td>Cultures and Civilizations*</td>
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Senior

<table>
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<th>Course</th>
<th>Hours</th>
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<tbody>
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<td>Statistics 471</td>
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<tr>
<td>Statistics 474 or 475</td>
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<tr>
<td>Logistics 421 or 413</td>
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<td>Logistics 460</td>
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<tr>
<td>Management 401</td>
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<tr>
<td>Electives</td>
<td>9-13</td>
</tr>
</tbody>
</table>

Total 120

*Meets University General Education Requirement.

Dual Concentrations

Requirements for the Bachelor of Science in Business Administration • Statistics Major • Dual Concentration with Logistics

Junior

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<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Business Administration 331-332</td>
<td>4</td>
</tr>
<tr>
<td>Business Administration 341-342</td>
<td>4</td>
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<tr>
<td>Statistics 365</td>
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<td>Business Administration 353</td>
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<tr>
<td>Logistics 310</td>
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<tr>
<td>Statistics 320</td>
<td>3</td>
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<tr>
<td>Cultures and Civilizations*</td>
<td>3</td>
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Senior

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Business Law 301</td>
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<tr>
<td>Statistics 471</td>
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<td>Management 401</td>
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</tr>
<tr>
<td>Electives</td>
<td>9-13</td>
</tr>
</tbody>
</table>

Total 120

*Meets University General Education Requirement.
College of Communication and Information

Gregory D. Reed, Interim Dean
Edward Caudill, Associate Dean for Graduate Studies and Research
Betty Bradley, Director of Advising

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.

The college includes four schools—School of Advertising and Public Relations, School of Communication Studies, School of Information Sciences, and School of Journalism and Electronic Media. Four undergraduate majors are offered—advertising, communication studies, journalism and electronic media, and public relations. A concentration within the advertising major is offered in public relations. The four 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, journalism and electronic media, public relations, and master’s program 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, Arhus, 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, Knoxville, and pay only room, board, and transportation costs. A similar exchange program with Escuela de Comunicacion Monica Herrera in Ecuador also exists. Students also have an opportunity to study abroad as part of a summer study abroad program in Paris or as part of a communication consortium at Paderno del Grappa in Italy.

The college, or one of its units, is a member of the Advertising Research Foundation; American Academy of Advertising; American Advertising Federation; American Library Association; Association for Education in Journalism and Mass Communication; Association of Library and Information Sciences Education; Association of Schools of Journalism and Mass Communication; Broadcast Education Association; National Communication Association; Public Relations Society of America; Society of Professional Journalists; Southern States Communication Association; Special Libraries Association; Tennessee Library Association; and Tennessee Press Association.

College Core Areas

Students in the Schools of Advertising and Public Relations, Communication Studies, and Journalism and 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 can be taken under this option. With the exception of field experience courses or practica, this option applies only to general electives.
Minors

Disciplinary minors are offered in communication studies and journalism and electronic media. An interdisciplinary minor in communication and information is available to students majoring in communication studies and students in majors outside the College of Communication and Information.

Minor in Communication and Information*

<table>
<thead>
<tr>
<th>Hours</th>
<th>Credit</th>
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<tbody>
<tr>
<td>Communication and Information 150</td>
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</tr>
<tr>
<td>6 hours from Advertising 250, Communication Studies 201, Information Sciences 102, Journalism and Electronic Media 200 or 275, or Public Relations 270</td>
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</tr>
<tr>
<td>9 hours of 300-level or above courses from one or more of the following areas: advertising, communication studies, information sciences, journalism and electronic media, or public relations</td>
<td>9</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>18</strong></td>
</tr>
</tbody>
</table>

*Communication Studies majors may not use communication studies courses to fulfill requirements for the minor.

Progression Requirements

Entering and transfer students are first associated with the college as pre-majors. They may progress to a major in communication studies, or journalism and electronic media after completing at least 30 hours of coursework, including the college gateway course (CCI 150), with a minimum 2.5 cumulative GPA.

Entering students and students from other University of Tennessee colleges may be considered for progression into the major in advertising or in public relations, after completing the first-year curriculum in advertising and public relations with a minimum 2.75 cumulative GPA in these courses. Transfer students must complete the first-year curriculum and earn a minimum of 15 credit hours at the University of Tennessee, Knoxville, with a 2.75 cumulative GPA. All applicants must submit a completed school application, statement of career goals, and an academic history.

At the completion of 45 hours, undecided students must be affiliated with the college as pre-majors or majors. (See the University of Tennessee, Knoxville, policy on University Students under Academic Policies and Procedures.) Communication and Information pre-majors must be accepted into a major before completion of 60 hours. Students transferring from other University of Tennessee colleges with 60 or more hours of coursework must be eligible for admission to a major upon completion of the college gateway course, Communication and Information 150. Until students progress to a major, they may not enroll in college courses numbered 300 or above without approval.

Requirements for Graduation

The Bachelor of Science in Communication is awarded to majors who complete a program of at least 120 hours prescribed under the advertising, public relations, or journalism and electronic media requirements listed below. At least 80 hours must be taken in courses other than journalism and mass communication, with no fewer than 65 hours from the College of Arts and Sciences. At least 18 hours in major courses must be taken at the University of Tennessee, Knoxville. Students must achieve a cumulative grade point average of at least 2.0 in all college courses used to fulfill graduation requirements.

The Bachelor of Arts in Communication is awarded to communication studies majors who successfully complete the 120 hours prescribed under the communication studies requirements. Students must earn at least C in all communication studies courses completed for the hours to count toward requirements for the major.

School of ADVERTISING AND PUBLIC RELATIONS

http://www.cci.utk.edu/~advpr/

Ronald E. Taylor, Director

Professors

Hovland, R., PhD...............................................................Illinois
Hoy, M., PhD.................................................................Oklahoma State
Taylor, R.E., PhD............................................................Illinois

Associate Professors

Haley, E., PhD..................................................................Georgia
McMillan, S., PhD............................................................Oregon
Morrison, M., PhD............................................................Georgia
Morrow, J.L., PhD............................................................Toledo
White, C.L., PhD.............................................................Georgia

Assistant Professors

Blakeman, R., MA.........................................................Southern Methodist
Fall, L.T., PhD...............................................................Michigan State
Riehert, B.P., PhD............................................................Tennessee

Instructors

Hagood, D., MA..............................................................North Carolina
Palencar, M., MA.............................................................Houston

ADVERTISING MAJOR

Requirements for the Bachelor of Science in Communication • Advertising Major

<table>
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<tr>
<th>Hours</th>
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<tr>
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<tr>
<td>Communication and Information 150</td>
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<td>1Foreign Language*</td>
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<td>Anthropology 130*</td>
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<td>Public Relations 270</td>
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<td>Economics 201*</td>
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Senior

<table>
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<td>Advertising 470</td>
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<td>Advertising 480</td>
<td>3</td>
</tr>
<tr>
<td>Communication and Information Elective</td>
<td>3</td>
</tr>
<tr>
<td>1Arts and Sciences Electives</td>
<td>6</td>
</tr>
<tr>
<td>General Electives</td>
<td>2-3</td>
</tr>
</tbody>
</table>

Total 120

*Meets University General Education Requirement.

1Six hours of foreign language (same language) at the intermediate level.

PUBLIC RELATIONS MAJOR

Requirements for the Bachelor of Science in Communication • Public Relations 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 and Information 150</td>
<td>3</td>
</tr>
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<td>Foreign Language*</td>
<td>6</td>
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<tr>
<td>Anthropology 130*</td>
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<td>Natural Science Electives*</td>
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<tr>
<td>Mathematics 119 or 123*</td>
<td>3</td>
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<tr>
<td>Mathematics 125* or 141*</td>
<td>3</td>
</tr>
<tr>
<td>Business Administration 101</td>
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</table>

Sophomore

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>Advertising 250</td>
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<tr>
<td>Public Relations 270</td>
<td>3</td>
</tr>
<tr>
<td>History 241*, 242*</td>
<td>6</td>
</tr>
<tr>
<td>Journalism and Electronic Media 200*</td>
<td>3</td>
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<tr>
<td>Journalism and Electronic Media 203</td>
<td>3</td>
</tr>
<tr>
<td>Advertising 310</td>
<td>3</td>
</tr>
<tr>
<td>Economics 201*</td>
<td>4</td>
</tr>
<tr>
<td>Statistics 201*</td>
<td>3</td>
</tr>
<tr>
<td>Accounting 200</td>
<td>3</td>
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</table>

Junior

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Administration 201</td>
<td>4</td>
</tr>
<tr>
<td>Psychology 110*</td>
<td>3</td>
</tr>
<tr>
<td>Advertising 340</td>
<td>3</td>
</tr>
<tr>
<td>Public Relations 320</td>
<td>3</td>
</tr>
<tr>
<td>Public Relations 370</td>
<td>3</td>
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<tr>
<td>Communication Studies 240*</td>
<td>3</td>
</tr>
<tr>
<td>Marketing 300</td>
<td>3</td>
</tr>
<tr>
<td>1English Literature Electives*</td>
<td>6</td>
</tr>
<tr>
<td>1Arts and Sciences Elective</td>
<td>3</td>
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</tbody>
</table>

Senior

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psychology 360</td>
<td>3</td>
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<tr>
<td>Public Relations 470</td>
<td>3</td>
</tr>
<tr>
<td>Public Relations 380</td>
<td>1</td>
</tr>
<tr>
<td>Communication Studies 440 or Psychology 440</td>
<td>3</td>
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<tr>
<td>Communication and Information Elective</td>
<td>3</td>
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<tr>
<td>Journalism and Electronic Media 400</td>
<td>3</td>
</tr>
<tr>
<td>1Arts and Sciences Electives</td>
<td>9</td>
</tr>
</tbody>
</table>

Total 120-121

*Meets University General Education Requirement.

1Six hours of foreign language (same language) at the intermediate level.

This requirement is met by taking two courses from the General Education Natural Sciences (NS) list. At least one of the courses must have a laboratory.

Contact the College of Communication and Information Undergraduate Advising Center for equivalent course listings and information regarding test-out or petition procedures.

English Literature Electives: English 201 or 207, 202 or 208, 221, 222, 231 or 237, 232 or 238, 233, 251, 252, 253, 254.

Any course in Arts and Sciences not currently required.

School of COMMUNICATION STUDIES
http://www.cci.utk.edu/~commstudies/

John W. Haas, Director

Associate Professors

Ambrester, M.L., PhD.........................................................Ohio
Glen, R.W., PhD.........................................................Northwestern
Haas, J.W., Ph.D.....................................................Kentucky
Violanti, M.T., Ph.D.....................................................Kansas

Assistant Professors

Ambler, R.S., PhD.........................................................Ohio State
Halone, K.K., Ph.D......................................................Oklahoma
Levine, K.J., PhD.......................................................Michigan State

COMMUNICATION STUDIES MAJOR

Requirements for the Bachelor of Arts in Communication • Communication Studies Major

<table>
<thead>
<tr>
<th>Freshman</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication and Information 150</td>
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<tr>
<td>Communication Studies 201</td>
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</tr>
<tr>
<td>English 101*, 102*</td>
<td>6</td>
</tr>
<tr>
<td>1Quantitative Reasoning Elective*</td>
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<tr>
<td>Psychology 110*</td>
<td>3</td>
</tr>
<tr>
<td>1Natural Sciences*</td>
<td>8</td>
</tr>
<tr>
<td>1Arts and Humanities Elective*</td>
<td>3</td>
</tr>
<tr>
<td>General Elective</td>
<td>1</td>
</tr>
</tbody>
</table>

Sophomore

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Communication Studies 210* or 240*</td>
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</tr>
<tr>
<td>Communication Studies 250 or 270</td>
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</tr>
<tr>
<td>1Social Sciences Elective*</td>
<td>3</td>
</tr>
<tr>
<td>History 241*, 242*</td>
<td>6</td>
</tr>
<tr>
<td>Mathematics 115* or Statistics 201*</td>
<td>3</td>
</tr>
<tr>
<td>1Arts and Humanities Elective*</td>
<td>3</td>
</tr>
<tr>
<td>1Foreign Language*</td>
<td>6</td>
</tr>
<tr>
<td>1Advanced Composition Elective*</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>Communication Studies 300, 310, 320, or 330</td>
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<tr>
<td>Communication Studies 340</td>
<td>3</td>
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<tr>
<td>Communication Studies 350</td>
<td>3</td>
</tr>
<tr>
<td>1Communication Studies Electives</td>
<td>6</td>
</tr>
<tr>
<td>1College Elective</td>
<td>3</td>
</tr>
<tr>
<td>1Arts and Sciences Electives</td>
<td>6</td>
</tr>
<tr>
<td>General Electives</td>
<td>6</td>
</tr>
</tbody>
</table>

Senior

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication Studies 499</td>
<td>3</td>
</tr>
<tr>
<td>1Communication Studies Elective</td>
<td>3</td>
</tr>
<tr>
<td>1Arts and Sciences Electives</td>
<td>6</td>
</tr>
<tr>
<td>1College Electives</td>
<td>6</td>
</tr>
<tr>
<td>General Electives</td>
<td>12</td>
</tr>
</tbody>
</table>

Total 120
Honors Program in Communication Studies

The School of Communication Studies offers an honors program that provides an intense educational experience by challenging superior participating students. All students must complete the college prerequisite course, Communication and Information 150, and Communication Studies 207, 210 or 240; 250 or 270; 340 and 350. After completing these required courses with a cumulative GPA of 3.5, students are eligible to apply for admission to the communication studies honors program. Application forms are available in the school office, 293 Communications Building, and may be downloaded at http://excellent.comm.utk.edu/~speech/undergraduate.html.

Upon acceptance into the program, students are required to complete the following:

- Communication Studies 407 (nine hours to include three of four topics—health communication, interpersonal communication, organizational and team communication, public communication)
- Communication Studies 497, 498 (3, 3)
- Communication Studies 499 (3)

To graduate with honors, students must maintain a 3.5 cumulative GPA in all courses in the major and a 3.25 cumulative GPA in all university courses.

Minor in Communication Studies

<table>
<thead>
<tr>
<th>Prerequisite to Minor</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication and Information 150</td>
<td>3</td>
</tr>
<tr>
<td>Required</td>
<td></td>
</tr>
<tr>
<td>Communication Studies 201 or 207</td>
<td>3</td>
</tr>
<tr>
<td>Electives</td>
<td></td>
</tr>
<tr>
<td>Communication studies courses (6 credit hours must be at the 400 level; no more than 3 hours may be at the 200 level; 210, 240, 445, 491, and 493 do not count toward the minor)</td>
<td>12</td>
</tr>
</tbody>
</table>

Total 18

School of INFORMATION SCIENCES

http://www.sis.utk.edu/

Edward M. Cortez, Director

Professors
Cortez, E.M., PhD..................................................Southern California
Pemberton, J.M., PhD..............................................Tennessee
Tenopir, C., PhD....................................................Illinois

Associate Professors
Bilal, D., PhD..........................................................Florida State
Robinson, W.C., PhD............................................Illinois
Wang, P., PhD.........................................................Maryland
Watson, J., EdD.....................................................Vanderbilt
Whitney, G., PhD.....................................................Michigan

Assistant Professors
Albright, K., PhD....................................................Tennessee
Allard, S.L., PhD....................................................Kentucky
Mehra, B., PhD......................................................Illinois

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 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

http://www.siue.edu/jem/

James A. Crook, Interim Director

Professors
Ashdown, P.G., PhD ................................................. Bowing Green
Bates, B.J., PhD .......................................................... Michigan
Bowles, D., PhD .......................................................... Wisconsin
Caudill, C.E. (Associate Dean), PhD .................................. North Carolina
Littmann, M. (Chair of Excellence), PhD ............................. Northwestern
Moore, B.A., PhD .......................................................... Ohio
Swan, N.R., PhD .......................................................... Missouri
Teeter, Jr., D.L., PhD ....................................................... Wisconsin

Associate Professors
Foley, D.J., MSJ ............................................................. Northwestern
Harmon, M., PhD ......................................................... Ohio
Hell, R.B., MA ............................................................... Syracuse

Assistant Professors
Clark, N., PhD .............................................................. Florida
Kaye, B., PhD .............................................................. Florida State
Legg, J.R., PhD ............................................................. Ohio
LePre, L., PhD .............................................................. Florida
Luther, C., PhD ............................................................. Minnesota

Instructor
Hufford, B.L., MEd ....................................................... Bowing Green

Emeriti Faculty
Cook, J.A., PhD ............................................................. Iowa State
Howard, H.H., PhD ......................................................... Ohio
Leiter, B.K., PhD .......................................................... Southern Illinois
Singletary, M.W., PhD ................................................... Southern Illinois

JOURNALISM AND ELECTRONIC MEDIA MAJOR

Requirements for the Bachelor of Science in Communication • Journalism and Electronic Media Major

Freshman Hours Credit
English 101*, 102* ...................................................... 6
Communication and Information 150 ......... 3
1Intermediate Foreign Language* ....................... 6
Psychology 110* ....................................................... 3
2Natural Sciences Electives* ................................. 7-8
3Quantitative Reasoning Electives* .......... 6-8

Sophomore
Journalism and Electronic Media 200* .................. 3
Journalism and Electronic Media 275 ................. 3
Political Science 102* ............................................... 3
Economics 201* .......................................................... 4
2Cultures and Civilizations Electives* .......................... 6
Communication Studies 210* or 240* ................. 3
1English Literature Electives* ............................... 6
1Arts and Sciences Elective ................................. 3

Junior
Journalism and Electronic Media 457 ................. 3
Journalism and Electronic Media Track ........... 6
Journalism and Electronic Media Electives ......... 6
Political Science Elective ........................................... 3
1Arts and Sciences Electives ............................... 6
General Electives ...................................................... 6

Senior
Journalism and Electronic Media 400 ................. 3
1Communication and Information Elective .......... 3
Journalism and Electronic Media 492 ............... 1
Journalism and Electronic Media Electives ....... 6
1Arts and Sciences Electives ............................... 6
1General Electives ...................................................... 6

Total 120

*Meets General Education Requirement.
1Six hours of intermediate foreign language (same language).
2Any course from the Natural Sciences (NS) General Education list. At least one of the courses must have a laboratory.
3Quantitative Reasoning (QR) electives: Mathematics 113, 115, 123, 123, 141 or 144, 142 or 148, 151, 152, 202.
4Any two courses from Cultures and Civilizations (CC) General Education list.
5Any course from the College of Arts and Sciences not currently required.
6Any three courses listed within one track. At least two of the courses must be upper-level.
7This requirement is met by taking two courses from the Natural Sciences (NS) General Education list.
8Any course not taught in the College of Communication and Information.
9Any course within the College of Communication and Information (including journalism and electronic media courses).
10Any course not taught in the College of Communication and Information.

NOTE: At least 30 credit hours in courses numbered 300 or above must be completed.

Minor in Journalism and Electronic Media

Prerequisite to Minor
Communication and Information 150 .................. 3

Required
Journalism and Electronic Media 200 ................. 3
Journalism and Electronic Media 203 or 275 .......... 3

Electives
Journalism and electronic media courses
(6 credit hours must be at the 300-400 level) ....... 9

Total 18

A student seeking a minor in journalism and electronic media must submit a petition to the Director of the School of Journalism and Electronic Media no later than the last semester prior to graduation. The petition should be accompanied by a list of taken and current courses that meet requirements for the minor, an academic history, and a current course schedule.
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 Studies by the National Recreation and Park Association/American Association for Leisure and Recreation.

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 society’s 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 Psychology and Counseling
- Health and Safety (Programs)
- Instructional Technology and Educational Studies
- Nutrition
- Exercise, Sport, and Leisure Studies
- Theory and Practice in Teacher Education

The College of Education, Health, and Human Sciences offers the following baccalaureate degrees:

- Bachelor of Science in Education
- Bachelor of Science in Human Ecology
- Bachelor of Science in Service Management
**Majors/Concentrations**

Students seeking the Bachelor of Science in Education may pursue majors and concentrations in the following:

- art education
- special education with concentrations in education of the deaf and hard of hearing; educational interpreting; modified and early childhood special education
- exercise science
- recreation and leisure studies with concentrations in: recreation and leisure administration; therapeutic recreation
- sport management

Students desiring the Bachelor of Science in Human Ecology may seek majors and concentrations in the following:

- child and family studies
- nutrition

Students pursuing the Bachelor of Science in Service Management may seek majors and concentrations in the following:

- hotel, restaurant, and tourism with concentrations in hotel and tourism management; restaurant and food-service 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 and family studies
- community health education
- dance
- 1elementary education
- 2engineering communication and performance
- gerontology (interdisciplinary)
- middle school education
- nutrition
- restaurant and foodservice management
- retail and consumer sciences
- secondary education
- tourism and hospitality management

Students pursuing a minor must complete at least one-half of the required classes at the University of Tennessee, Knoxville, and all courses must be taken for a letter grade unless otherwise specified.

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 courses). Normally, students who fail to progress by the completion of 59 credit hours will be ineligible to enroll in most upper-division and 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 achieve 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, Knoxville.

**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.

**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 are 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 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 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).

Senior Student General Education Test

The Tennessee Higher Education Commission (THEC) requires each public institution of higher education to evaluate the general education skills of the senior class. The College of Education, Health, and Human Sciences requires each of its senior students to take this general education test prior to graduation. The test results enable the University of Tennessee, Knoxville, to evaluate its general education program and to qualify for needed funding from the State of Tennessee. Students enrolled in programs that are scheduled to take a major field test are exempt from the general education testing.

Senior Student Major Field Test

The Tennessee Higher Education (THEC) requires that each public institution for higher education to assess the knowledge and expertise of students within each major area of study. Each year, a subset of all major fields of study on campus is required to test all graduating seniors from those respective fields. The results from these tests enable the University of Tennessee, Knoxville, to evaluate and, where necessary, improve the quality of major fields of study. Students are informed in their senior year if they are required to take a major field test. Students enrolled in a major field of study that is scheduled to test majors are exempt from the general education testing that particular year.

Teacher Education at the University of Tennessee, Knoxville

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.

The Teacher Education Program at the University of Tennessee is accredited by the National Council for the Accreditation of Teacher Education (NCATE), www.ncate.org. This accreditation covers the initial teacher preparation programs and advanced educator preparation programs.

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 45 credit hours Agriculture Education and Special Education, 60 hours Elementary Education, 75 hours Secondary Education, and 90 hours Early Childhood Education; (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 cumulative 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 and 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 and the Department of Child and Family Studies, 115 Jessie Harris Building.

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 2002-2003 Academic Year: The University of Tennessee 97%; State of Tennessee 95%.
CHILD AND FAMILY STUDIES MAJOR

The department’s major is designed for students whose educational and career goals are focused on studying and working with children and families within educational programs, community services, and other professional settings. The major is designed to accommodate the special interests or strengths of students and allows for flexibility and individualization. Students design a program of study in consultation with their advisor that includes a core of required courses, a complement of specialty courses supportive of individual interests, and a 12-hour practicum that will complete their program of study. All students graduating with a child and family studies major will have an in-depth knowledge about children and families, a broad integrative perspective, and means for application.

In consultation with their faculty advisor, students will select at least 27 credit hours from the list of courses meeting departmental requirements for specialty areas. Students must complete a total of three specialty areas of 9 credit hours each. (Students electing to pursue the early childhood education teacher licensure specialty area will take a total of 34 credit hours in this specialty area plus an additional 3 credit hours from their advanced social science electives.) Students wishing to emphasize the advanced child development specialty area may satisfy two of their three specialty areas by taking 18 credit hours in that area. A course may be counted in one specialty area only and may not be used to fulfill any other elective requirement.

Progression Requirements

Students are expected to know the criteria they must meet in order to progress into a practicum (Child and Family Studies 470, 480, or 490) and to regularly monitor their progress in meeting these criteria. Students will not be allowed to progress into the practicum until these criteria are met. If students do not appear able to meet these criteria, they are encouraged to work closely with their advisor to plan an alternative educational program. Specific information on how to apply for the practicum is available from the student’s advisor. Students must work closely with their advisor to ensure that they understand the requirements for progression and that they strictly follow the application process for the practicum experience of their choice.

Prior to the Practicum

- Obtain written permission from the academic advisor to apply for the practicum and complete the application one year prior to the intended practicum semester.
- Complete the self-disclosure forms allowing university personnel to obtain student conduct and criminal background information one year prior to the intended practicum semester. The department’s Undergraduate Committee will evaluate any negative background check.

Prerequisites for the Practicum

- Completion of at least 90 hours (senior standing).
- Completion of all child and family studies core courses.
- A cumulative GPA of at least 2.5 (A cumulative GPA of at least 2.7, including transfer credits, is required for students electing the Child and Family Studies 470 practicum option).
- A minimum grade of C in all child and family studies courses.

Certified Family Life Educator

Students interested in applying for certification as a Family Life Educator through the National Council on Family Relations must complete 5 courses from the Family Life Education specialty area: Child and Family Studies 240, 345, 360, 440, and Counselor Education 380. These courses are in addition to the Child and Family Studies core courses. Contact your advisor for specific information about becoming a Certified Family Life Educator through the department’s approved program of study.

Early Childhood Education Teacher Licensure

The child and family studies major can provide the undergraduate preparation needed for a student who would like to be licensed to teach early childhood education in the State of Tennessee (pre-K through grade 4). The early childhood education licensure option is offered in conjunction with a master’s degree in child and family studies (early childhood education concentration). Students who wish to pursue this option must take the early childhood education-licensure specialty area as an undergraduate. Upon attainment of senior status (i.e., 90 hours), students will complete the admission to Teacher Education process (see details in the teacher education section of this catalog) and simultaneously make application for admission to the MS with a major in child and family studies (See the Graduate Catalog for details.) Acceptance into the teacher licensure program is contingent upon acceptance into the department’s master’s program. Students interested in this option should work closely with their advisor to ensure that they understand and meet the Teacher Education Program requirements and the requirements for graduate study and that they strictly follow the application process.

Requirements for the Bachelor of Science in Human Ecology • Child and Family Studies Major

<table>
<thead>
<tr>
<th>Freshman</th>
<th>Hours Credit</th>
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<tbody>
<tr>
<td>Child and Family Studies 101</td>
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</tr>
<tr>
<td>English 101*, 102*</td>
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</tr>
<tr>
<td>Natural Sciences Electives*</td>
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<td>Arts and Humanities Electives*</td>
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<td>Mathematics 115* or 202*</td>
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<td>Specialty Area Electives*</td>
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<td>Elective</td>
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<table>
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<th>Junior</th>
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<tbody>
<tr>
<td>Child and Family Studies 2118 or 213</td>
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<tr>
<td>Child and Family Studies 320</td>
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<td>Child and Family Studies 385</td>
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Child and Family Studies 395 ............................................... 3
1Specialty Area Electives ................................................ 15
1Advanced Social Sciences Electives ................................. 6

Senior
Child and Family Studies 405 .............................................. 3
Child and Family Studies 470 or 480 or 49010 ....................... 12
1Specialty Area Electives ................................................ 6
1Advanced Social Sciences Electives ................................. 6
1Electives ............................................................... 12

Total 125

* Meets University General Education requirement.
Note: Students must meet the General Education Requirement for communicating through Writing and Communicating Orally by selecting a course with a (WC) designation and a course with an (OC) designation. These courses may be in the major or from another discipline.
1Students must select one of the following sequences: Astronomy 161-162, Biology 101-102; 111-112, Chemistry 100-110, Chemistry 120-130, Geography 131-132, or Geology 101 and 102, or 103.
Arts and Humanities Electives: Select 1 course from the following in consultation with an advisor.
1Any two History-prefix courses may be chosen. (A non-U.S. History sequence is needed if English is chosen)
2A sequence of a modern foreign language at the 200-level or above must be selected. Consult the University General Education Requirement for the Advanced Social Science elective requirement. (The sociology sequence meets the Social Science General Education Requirement.)
3Students must complete all the required courses in the following sequences:
4At least 48 hours in 300-400 level courses are required.
5ECE Teacher Licensure students must take CFS 211.
6A total of 12 hours selected from 300-400 level CFS courses or 300-400 level Sociology, Psychology, Political Science, or Anthropology courses.
7Children and Families at Risk: Educational Psychology 432; Health 406, 430, 435; Psychology 330; Recreation and Leisure Studies 320; Sociology 340, 351, 352; Special Education 470.
8Early Childhood Education/Licensure (all courses are required): Child and Family Studies 105, 106, 350, 351, 353, 422; Cultural Studies in Education 400; Educational Psychology 401; Elementary Education 445; Information Sciences 330; Instructional Technology 486; Reading Education 430; Special Education 402.
9Family and Community Services: Communication Studies 210, 440; Counselor Education 410; Educational Psychology 460; Political Science 446; Psychology 424; Social Work 200, 250; Sociology 110.
10Family Life Education: Agricultural and Extension Education 211; Child and Family Studies 240, 360, 345, 440; Communication Studies 330; Counselor Education 380; Educational Psychology 210; Health 426; Philosophy 244; Psychology 409.
11Health and Wellness: Communication Studies 425; Health 330, 375, 400, 405, 425; Nursing 202; Philosophy 246; Psychology 430; Public Health 300, 305; Sociology 414; University Studies 311.
12Women and Families: African and African-American Studies 483; Counselor Education 410; Health 425; History 453; Religious Studies 320; Women’s Studies 220, 360, 382; Women’s Studies/Psychology 434.

Minor in Child and Family Studies

Required Courses Hours Credit
Child and Family Studies 210, 220, and one of 211, 213, or 320 . . . . . . 9
Select 9 hours from the following:
Child and Family Studies 211, 213, 240, 312, 320, 345, 360 . . . . . . 9

Total 18
Department of
CONSUMER SERVICES MANAGEMENT
http://csm.utk.edu

Nancy B. Fair, Head

Professors
Costello, C., PhD.................................................................Tennessee
Fair, N., PhD.......................................................................North Carolina State
Fairhurst, A., PhD...............................................................Oklahoma State
Jolly, L., PhD......................................................................Oklahoma State

Associate Professors
Kim, Y., PhD__________________________________________North Carolina
Wise, D., PhD.....................................................................Texas A&M

Assistant Professors
Antun, J., PhD....................................................................South Carolina
Chen, R., PhD.......................................................................Texas A&M

Internship Coordinators
Aaser, D., MS.................................................................Wisconsin (Stout)
Simpson, L., MS.................................................................Tennessee

Executive-in-Residence
Piper, C., BA.................................................................Maryville College

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, RESTAURANT, AND TOURISM MAJOR

The hotel, restaurant, and tourism 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, restaurant, and tourism 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, Restaurant, and Tourism 210 or 211 and prior to entering Retail and Consumer Sciences/Hotel, Restaurant, and Tourism 390. Applications for progression are available in the departmental office.

For progression into each concentration, students must meet the following criteria.

• Cumulative grade point average 2.3 or greater for at least 30 semester hours completed.
• Grade of C or better in all retail and consumer sciences and/or hotel, restaurant, and tourism prefix courses.
• Completion of English 102, 102, and Mathematics 125.

For graduation, students must earn a grade of C or better in all retail and consumer sciences and/or hotel, restaurant, and tourism courses.

Requirements for the Bachelor of Science in Service Management • Hotel, Restaurant, and Tourism Major • Hotel and Tourism Management Concentration

Freshman

<table>
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<tr>
<th>Course</th>
<th>Hours</th>
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<tr>
<td>English 101*, 102*</td>
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<td>Mathematics 119 or 123* and 125*</td>
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<tr>
<td>Arts and Humanities Electives*</td>
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<td>Cultures and Civilizations Elective*</td>
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Sophomore

<table>
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<th>Hours</th>
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<tr>
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<tr>
<td>Hotel, Restaurant, and Tourism 311</td>
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Junior

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<td>Marketing 300</td>
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<td>Management 300</td>
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<td>Communication Studies 240*</td>
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<td>Cultures and Civilizations Elective*</td>
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<td>Retail and Consumer Sciences 341</td>
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<tr>
<td>Hotel, Restaurant, and Tourism 390*</td>
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<td>Hotel, Restaurant, and Tourism 420</td>
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<tr>
<td>Hotel, Restaurant, and Tourism 450</td>
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Senior

<table>
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<tr>
<td>Finance 301</td>
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<tr>
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</tr>
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<td>Hotel, Restaurant, and Tourism 480 or 490</td>
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</tr>
<tr>
<td>Hotel, Restaurant, and Tourism 485</td>
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</table>

Total 120-122

*Meets University General Education Requirement.

Students must meet the General Education requirement for Communicating through Writing by selecting a course with a (WC) designation. This course may be in the major or from another discipline.

Requirements for the Bachelor of Science in Service Management • Hotel, Restaurant, and Tourism Major • Restaurant and Foodservice Management Concentration

Freshman

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>English 101*, 102*</td>
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<tr>
<td>Natural Sciences Electives*</td>
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<tr>
<td>Mathematics 119 or 123* and 125*</td>
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</tr>
<tr>
<td>Arts and Humanities Electives*</td>
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<tr>
<td>Hotel, Restaurant, and Tourism 101</td>
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<tr>
<td>Electives</td>
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...
Sophomore
Accounting 200 .................................................. 3
Statistics 201* .................................................. 3
Economics 201* .................................................. 4
Social Sciences Elective* .................................. 3
Hotel, Restaurant, and Tourism 102 .................. 1
Business Administration 201 .......................... 4
Cultures and Civilizations Elective* ................ 3
Hotel, Restaurant, and Tourism 210 ................. 3
Retail and Consumer Sciences 341 ................. 3
Elective ......................................................... 3

Junior
Marketing 300 .................................................. 3
Management 300 .............................................. 3
Communication Studies 240* ......................... 3
Finance 301 ..................................................... 3
Cultures and Civilizations Elective ................ 3
Hotel, Restaurant, and Tourism 311 ................. 3
Hotel, Restaurant, and Tourism 326 ................. 3
Hotel, Restaurant, and Tourism 341 ................. 1
Hotel, Restaurant, and Tourism 360 ................. 3
Hotel, Restaurant, and Tourism 423 ................. 3
Hotel, Restaurant, and Tourism 390* ............... 3
Hotel, Restaurant, and Tourism 420 ................. 6

Senior
Hotel, Restaurant, and Tourism 410 ................. 3
Hotel, Restaurant, and Tourism 425 ................. 3
Hotel, Restaurant, and Tourism 445 ................. 3
Hotel, Restaurant, and Tourism Elective .......... 3
Hotel, Restaurant, and Tourism 480 or 490 ....... 9
Hotel, Restaurant, and Tourism 485 ................. 3

Total 121-123

*Meets University General Education Requirement.

Students must meet the General Education requirement for Communicating through Writing by selecting a course with a (WC) designation. This course may be in the major or from another discipline.

Minor in Restaurant and Foodservice Management
Required Courses Hours Credit
Hotel, Restaurant and Tourism 101, 210, 311, 326, 341, 445 ............... 16

Total 16

Minor in Tourism and Hospitality Management
Required Courses Hours Credit
Hotel, Restaurant and Tourism 210, 211, 224 .................................. 9
Select two from the following:
  Hotel, Restaurant, and Tourism 311, 423, 435, 450 ......................... 6

Total 15

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 major 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, Restaurant, and Tourism 210 or 211 and prior to entering Retail and Consumer Sciences/Hotel Restaurant, and Tourism 390. Applications for progression are available in the department office.

For progression into the major, students must meet the following criteria:

- cumulative grade point average 2.3 or greater with a minimum of 30 semester hours completed
- grade of C or better in all retail and consumer sciences and/or hotel, restaurant, and tourism prefix courses
- completion of English 101, 102, and Mathematics 125
- 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, restaurant, and tourism courses.

Requirements for the Bachelor of Science in Service Management • Retail and Consumer Sciences Major

Freshman
English 101*, 102* .............................................. 6
Natural Sciences Electives* .................................. 6-8
Mathematics 119 or 123*, and 125* .......................... 6
Arts and Humanities Electives* ......................... 6
Cultures and Civilizations Elective* .................. 3
Elective ......................................................... 3

Sophomore
Cultures and Civilizations Elective* .................. 3
Retail and Consumer Sciences 102 .................. 1
Statistics 201* .................................................. 3
Economics 201* ............................................... 4
Social Sciences Elective* .................................. 3
Accounting 200 .............................................. 3
Business Administration 201 ......................... 4
Retail and Consumer Sciences 210, 341 .......... 16
Elective ......................................................... 6

Junior
Marketing 300 .................................................. 3
Management 300 .............................................. 3
Communication Studies 240* ......................... 3
Retail and Consumer Sciences 310, 311, 346, 376, 390* ................. 16
Retail and Consumer Sciences 422 ................. 6

Senior
Finance 301 ..................................................... 3
Retail and Consumer Sciences 360 ................. 3
Retail and Consumer Sciences 410 ........................................ 3
Retail and Consumer Sciences 415 or 421 .......................... 3
Retail and Consumer Sciences Electives .............................. 12
Electives ........................................................................ 5
Total 120-122

*Meets University General Education Requirement.
1Retail and Consumer Sciences Electives: Select 12 hours from the following courses: Retail and Consumer Sciences 320, 411, 412, 415, 421, 480, 482, 484, 493, 495, 497; Hotel, Restaurant, and Tourism 425; Materials, Science and Engineering 220.

Minor in Retail and Consumer Sciences

Required Courses Hours Credit
Retail and Consumer Sciences 210, 341 ............................. 6
Select 3 of the following:
Retail and Consumer Sciences 310, 346, 376, 412, 415, 421, 480 .......................... 9
Total 15

Department of EDUCATIONAL PSYCHOLOGY AND COUNSELING

R. Steve McCallum, Head
Tricia McClam, Associate Head

Professors
Bogue, Grady, EdD..............................................Memphis State
Brockett, R., PhD...................................................Syracuse
George, T. (Associate Dean), EdD.......................................Tennessee
Greenberg, K., PhD................................................Georgetown
Huck, S., PhD..........................................................Northwestern
Kronick, R., PhD....................................................Tennessee
McCallum, R.S., PhD.......................................Georgia
McCormick, T., PhD............................................South Carolina
Mertz, N., EdD..........................................................Columbia
Peters, J., EdD...........................................................North Carolina State
Peterson, M., PhD...................................................Ohio State
Poppen, W., PhD...................................................Ohio State
Skinner, C., PhD.....................................................Lehigh
Thompson, C., PhD................................................Ohio State
Williams, R., PhD....................................................George Peabody
Woodside, M., EdD................................................Virginia Tech

Associate Professors
Bain, S., PhD........................................................Southern Mississippi
Studer, J., EdD......................................................Toledo
Ziegler, M., EdD....................................................Columbia

Assistant Professors
Diambrice, J., EdD................................................William & Mary
Paulus, T., PhD....................................................Indiana
Skinner, A., PhD....................................................Mississippi State

Research Professors
Cassell, J., PhD.....................................................Kansas
Colvin, C., EdD......................................................Virginia
Mulkey, S., PhD......................................................Florida State

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

Hours Credit
Counselor Education 206 .................................................. 3
Counselor Education 306 .................................................. 3
Counselor Education 406 .................................................. 3
Select two of the following courses:
Psychology 360 .......................................................... 3
Management 440 .......................................................... 3
Communication Studies 420 ........................................... 3
Communication Studies 440 ........................................... 3
Total 15

Department of EXERCISE, SPORT AND LEISURE STUDIES

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

Joy T. DeSensi, Head

Professors
Bassett, Jr., D., PhD......................................................Wisconsin
DeSensi, J.T., EdD.......................................................North Carolina (Greensboro)
Hayes, G.A., PhD......................................................North Texas State
Howley, E., PhD...........................................................Wisconsin
Liemohn, W., PhD........................................................Iowa
Wrisberg, C.A., PhD................................................Michigan

Associate Professors
Jones, R.E., PhD........................................................Toledo
Kelley, D.R., PhD......................................................Georgia State
Krick, K.L., ReD.........................................................Indiana
Thompson, D., PhD.....................................................Virginia
Zhang, S., PhD..........................................................Oregon

Assistant Professors
Fairbrother, J., PhD.....................................................Florida State
Fisher, L.A., PhD........................................................California (Berkeley)
FitzHugh, E., PhD...........................................................Alabama
Hardin, R.L., PhD......................................................Tennessee
Klein, D., PhD..........................................................Arizona State
McCutchener, M.G., EdD.............................................North Carolina (Greensboro)

Emerit Faculty
Kozar, A., PhD...........................................................Michigan

Internship Coordinator
Brown, L.Y., MS......................................................Tennessee

PEAP Program Coordinator
Cattigani, E., MS......................................................Tennessee

Lecturers
BeMiller, J. J.D..............................................................Tennessee
Causey, S., MS...........................................................Tennessee

Artist in Residence—Dance
Burke, P.

EXERCISE SCIENCE MAJOR

Progression Requirements

Progression to the exercise science major requires a minimum undergraduate cumulative GPA of 2.5 after a minimum of 45 hours of coursework and completion of Exercise Science 100, Chemistry 120, and Physics 221.

- 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 Biochemistry and Cellular and Molecular Biology 230, all exercise science courses, and all professional electives.
RECREATION AND LEISURE STUDIES MAJOR

The professional disciplines that comprise recreation and leisure studies prepare students for management and administrative positions in recreation, leisure, and sport enterprises. The recreation and leisure administration concentration provides students with an understanding of the role and impact of recreation and leisure in achieving and sustaining socioeconomic and political order in an increasingly culturally diverse society. A business minor is built into the curriculum, which makes graduates more competitive in the job market. Graduates of the program pursue careers with city/county parks and recreation departments, state and national parks, resorts and theme parks, professional and collegiate athletics, campus recreation and a variety of corporate settings.

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 Council for Therapeutic Recreation Certification. Graduates are successful in securing employment in programs for mental health and mental retardation, physical rehab centers, 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 Education • Recreation and Leisure Studies Major • Recreation and Leisure Administration Concentration (Accredited in General Recreation by NRPA/AALR)

Freshman

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Credit</th>
</tr>
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<td>English 101*, 102*</td>
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<tr>
<td>English 103* or 360</td>
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<tr>
<td>Mathematics 125* or 141* or 142* or 151* or 152*</td>
<td></td>
<td>1.5</td>
</tr>
<tr>
<td>Chemistry 250*</td>
<td></td>
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</tr>
<tr>
<td>Psychology 110*</td>
<td></td>
<td>1.5</td>
</tr>
<tr>
<td>Agriculture and Natural Resources 290</td>
<td></td>
<td>1.5</td>
</tr>
<tr>
<td>Arts and Humanities Elective*</td>
<td></td>
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</tr>
</tbody>
</table>

Sophomore

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sociology 110*</td>
<td></td>
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</tr>
<tr>
<td>Communications Studies 210* or 240*</td>
<td></td>
<td>1.5</td>
</tr>
<tr>
<td>English 295* or 360*</td>
<td></td>
<td>1.5</td>
</tr>
<tr>
<td>Nutrition 300*</td>
<td></td>
<td>1.5</td>
</tr>
<tr>
<td>Health 310*</td>
<td></td>
<td>1.5</td>
</tr>
<tr>
<td>Recreation and Leisure Studies 390</td>
<td></td>
<td>1.5</td>
</tr>
<tr>
<td>Social Science Elective*</td>
<td></td>
<td>1.5</td>
</tr>
<tr>
<td>Physical Education Elective*</td>
<td></td>
<td>1.5</td>
</tr>
<tr>
<td>Exercise Science Elective*</td>
<td></td>
<td>1.5</td>
</tr>
<tr>
<td>Recreational and Leisure Studies 300</td>
<td></td>
<td>1.5</td>
</tr>
<tr>
<td>Total 120-122</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Junior

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exercise Science Elective*</td>
<td></td>
<td>1.5</td>
</tr>
<tr>
<td>Recreation and Leisure Studies 300</td>
<td></td>
<td>1.5</td>
</tr>
<tr>
<td>Social Science Elective*</td>
<td></td>
<td>1.5</td>
</tr>
<tr>
<td>Physical Education Elective*</td>
<td></td>
<td>1.5</td>
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<tr>
<td>Total 120-122</td>
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Senior

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exercise Science Elective*</td>
<td></td>
<td>1.5</td>
</tr>
<tr>
<td>Recreation and Leisure Studies 300</td>
<td></td>
<td>1.5</td>
</tr>
<tr>
<td>Social Science Elective*</td>
<td></td>
<td>1.5</td>
</tr>
<tr>
<td>Total 120-122</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Meets University General Education Requirement.

Students must meet the University General Education requirement for Communicating through Writing by selecting a course with a (WC) designation.

³Must be a Communicating through Writing (WC) course.

7Proficiency 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.

6Professional elective courses passed with a minimum C grade. See advisor for appropriate courses.

5Exercise Science students must have cumulative minimum GPA of 2.5 to register for and complete these courses.

4Evidence of current CPR certification at time of graduation.

Total 120
Requirements for the Bachelor of Science in Education • Recreation and Leisure Studies Major • Therapeutic Recreation Concentration (Accredited in General Recreation by NRPA/AALR)

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>Quantitative Reasoning*</td>
<td>6</td>
</tr>
<tr>
<td>Chemistry 100* and 110* or 120* and 130*</td>
<td>8</td>
</tr>
<tr>
<td>Child and Family Studies 210*</td>
<td>3</td>
</tr>
<tr>
<td>Recreation and Leisure Studies 201</td>
<td>4</td>
</tr>
<tr>
<td>Retail and Consumer Sciences 102</td>
<td>1</td>
</tr>
<tr>
<td>Psychology 110*</td>
<td>3</td>
</tr>
</tbody>
</table>

Sophomore

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Child and Family Studies 220</td>
<td>3</td>
</tr>
<tr>
<td>Biochemistry and Cellular and Molecular Biology 230</td>
<td>5</td>
</tr>
<tr>
<td>Communication Studies 210* or 240*</td>
<td>3</td>
</tr>
<tr>
<td>Health 310*</td>
<td>3</td>
</tr>
<tr>
<td>Recreation and Leisure Studies 290</td>
<td>2</td>
</tr>
<tr>
<td>Recreation and Leisure Studies 320, 325</td>
<td>6</td>
</tr>
<tr>
<td>Philosophy 246 (writing-emphasis course)</td>
<td>3</td>
</tr>
</tbody>
</table>

Junior

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exercise Science 332 or Ecology and Evolutionary Biology 240</td>
<td>3-4</td>
</tr>
<tr>
<td>Psychology 330</td>
<td>3</td>
</tr>
<tr>
<td>Arts and Humanities*</td>
<td>6</td>
</tr>
<tr>
<td>Recreation and Leisure Studies 310, 425</td>
<td>6</td>
</tr>
<tr>
<td>Recreation and Leisure Studies 390</td>
<td>2</td>
</tr>
<tr>
<td>Sport Studies 290</td>
<td>3</td>
</tr>
<tr>
<td>Electives</td>
<td>3</td>
</tr>
<tr>
<td>Recreation and Leisure Studies 450; Psychology 409; Health 406, 435; Sociology 414; Special Education 470</td>
<td>3</td>
</tr>
</tbody>
</table>

Senior

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exercise Science 411</td>
<td>3</td>
</tr>
<tr>
<td>Recreation and Leisure Studies 410, 420, 430</td>
<td>9</td>
</tr>
<tr>
<td>Recreation and Leisure Studies 490</td>
<td>12</td>
</tr>
<tr>
<td>Electives</td>
<td>4</td>
</tr>
</tbody>
</table>

Total 122-123

* Meets General Education Requirements

1 Requires progression into the sport management major.

** Courses must be in addition to those specified for the major and must be elected from: Child and Family Studies, Psychology, Sociology, Health, Safety, Recreation and Leisure Studies, Special Education, Human Services, Exercise Science, Sport Studies.

** Select one course from this group.

1 Business minor requirement.

NOTE:

A. 2.5 GPA is required for college affiliation and progress in major.
B. Recreation 290 and 390 are for recreation majors only and are required prior to enrolling in senior internship.
C. 2.5 GPA is required for enrollment in RLS 310 and 490.
D. A minimum of 48 upper-division hours is required for graduation.

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.

Progression Requirements

Students must submit an application upon meeting the following minimum criteria.

• minimum of 30 semester hours earned

• minimum 2.5 GPA for all college work

• completion of Sport Management 100 and 250 with a grade of C or better

• 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

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>Cultures and Civilizations Electives*</td>
<td>6</td>
</tr>
<tr>
<td>Sport Management Elective*</td>
<td>3</td>
</tr>
<tr>
<td>Sport Management 100</td>
<td>1</td>
</tr>
<tr>
<td>Arts and Humanities Elective*</td>
<td>3</td>
</tr>
<tr>
<td>Business Administration 101</td>
<td>1</td>
</tr>
<tr>
<td>Mathematics 125* or 141*</td>
<td>3-4</td>
</tr>
<tr>
<td>General Electives</td>
<td>7</td>
</tr>
</tbody>
</table>

Sophomore

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accounting 200</td>
<td>3</td>
</tr>
<tr>
<td>Economics 201*</td>
<td>4</td>
</tr>
<tr>
<td>Business Administration 201</td>
<td>4</td>
</tr>
<tr>
<td>Natural Sciences Electives*</td>
<td>7-8</td>
</tr>
<tr>
<td>Communication Studies 210* or 240*</td>
<td>3</td>
</tr>
<tr>
<td>Sport Management 250, 2902</td>
<td>6</td>
</tr>
<tr>
<td>Statistics 201*</td>
<td>3</td>
</tr>
</tbody>
</table>

Junior

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management 300</td>
<td>3</td>
</tr>
<tr>
<td>Finance 301*</td>
<td>3</td>
</tr>
<tr>
<td>Marketing 300*</td>
<td>3</td>
</tr>
<tr>
<td>Sport Management 3502, 390**</td>
<td>6</td>
</tr>
<tr>
<td>Arts and Humanities Elective*</td>
<td>3</td>
</tr>
<tr>
<td>Sport Studies 335</td>
<td>3</td>
</tr>
<tr>
<td>Communicating through Writing Elective*</td>
<td>3</td>
</tr>
<tr>
<td>General Electives</td>
<td>6</td>
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</table>

Senior

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sport Management 490</td>
<td>12</td>
</tr>
<tr>
<td>Choose 5: Sport Management 330, 370, 380, 440, 450, 460; Recreation and Leisure Studies 415, 440; Sport Studies 336</td>
<td>15</td>
</tr>
<tr>
<td>General Electives</td>
<td>3</td>
</tr>
</tbody>
</table>

Total 120-122

* Meets University General Education Requirement.
Minor in Dance

Core Courses Hours Credit
Dance 480 ........................................ 3
Dance 490 ........................................ 3

OPTION I: PERFORMANCE
Dance 101 or 201 .................................. 1
Select from Dance 310*, 320*, 330*, 340, 410**, 420**, 430**  10
Dance 440 ........................................ 2
Dance 445 ........................................ 2
or

OPTION II: PEDAGOGY
Select from Dance 310*, 320*, 330*, 340, 410**, 420**, 430**  6
Dance 415 ........................................ 2
Dance 445 ........................................ 2
Dance 495 ........................................ 3

Total 21

*Course may be repeated for up to 12 credit hours.
**Course may be repeated for up to 16 credit hours.

Health and Safety Programs

http://hes.utk.edu/grad/safety.html

Thomas George, Interim Director

Professors
Clarke, B., PhD ........................................ Virginia Tech
Gonski, J., DrPH ....................................... UCLA
Hamilton, C., DrPH .................................... Oklahoma
Keel, M., PhD ......................................... Tennessee
Petty, G., PhD ......................................... Missouri

Associate Professors
Pursley, R., PhD ...................................... Iowa
Smith, S., EdD ......................................... Tennessee

Emeriti Faculty
Kirk, R., HSD .......................................... Indiana
Wallace, B., EdD ...................................... Northern Colorado

Minor in Gerontology

An intercollegiate/interdisciplinary undergraduate gerontology minor is coordinated through the health program. In addition to the coordinating program, 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.

Required Courses Hours Credit
12 hours from Child and Family Studies 312 (3);
Health 406 (3);
Health 465 (3); Sociology 415 (3); Nursing 400 (3);
and Practicum Experience (taken within any of
the participating department prefixes) (3) ....................... 12

Total 12

Minor in Adolescent Health

Required Courses Hours Credit
Health 305 (required) .................................. 3

Department of INSTRUCTIONAL TECHNOLOGY AND EDUCATIONAL STUDIES

http://ites.tennessee.edu/

Russell French, Interim Head

Professors
Counts, E., EdD ........................................ Texas A&M
French, R., PhD ........................................ Ohio State
Ray, J., EdD ........................................... Tennessee
Thayer-Bacon, B., PhD ............................... Indiana
Vaugh, M., EdD ........................................ Georgia

Associate Professors
Connelly, M., EdD .................................... Virginia Tech
O’Brien, B., EdD ...................................... Memphis
Wright, H., PhD ....................................... Toronto

Assistant Professor
Pfaffman, J., PhD ..................................... Vanderbilt
Moyer, D., PhD ....................................... Ohio State

Emeriti Faculty
Dessart, D., PhD ..................................... Maryland
Myer, M., EdD ......................................... Florida
Roeske, E., PhD ....................................... Ohio State

Graduate degree only.

Department of NUTRITION

http://nutrition.utk.edu/

Jay Whelan, Head

Professors
Houghton, B., EdD .................................... Columbia
Karlstad, M., PhD ..................................... Loyola
Moussa, N., PhD ...................................... Paris
Sachan, D., PhD ...................................... Illinois
Whelan, J., PhD ...................................... Penn State
Zemel, M., PhD ...................................... Wisconsin

Associate Professors
Bailey, J., PhD ....................................... Iowa State
Burney, J., PhD ....................................... Tennessee
Greer, B., PhD ....................................... Tennessee

Assistant Professors
Bittle, J., PhD ....................................... Tennessee
Jahns, L., PhD ........................................ North Carolina
Jones, S., PhD ....................................... North Carolina
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, and psychology. 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. The BS in Nutrition is currently granted approval status by the Commission of Accreditation/Approval for Dietetics Education of the American Dietetic Association, 120 S. Riverside Plaza, Chicago, Illinois 60606-6995, (312) 899-0040, url: http://www.eatright.org/cede. 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 management, 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 (RD). Students may receive more information from the department about RD requirements. RDs 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 Nutrition 100 or 300, 310, and Chemistry 350, and prior to enrolling in Nutrition 313 and 314. Applications are available in the departmental office or from the departmental Web site.

For progression into the major, students must meet the following criteria.

- cumulative grade point average 2.4 or greater
- 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>Class</th>
<th>Freshman</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Freshman</strong></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Accounting</td>
<td>200</td>
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<tr>
<td>Electives</td>
<td></td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>Cultures and Civilizations Elective*</td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Arts and Humanities Elective*</td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Nutrition 310, 313, 314</td>
<td></td>
<td></td>
<td>10</td>
</tr>
<tr>
<td>Communication Studies 240*</td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Microbiology 210*</td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td><strong>Sophomore</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hotel, Restaurant and Tourism 210</td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Nutrition 201, 302</td>
<td></td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Chemistry 350</td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Hotel, Restaurant and Tourism 101</td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Statistics 201*</td>
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<td></td>
<td>3</td>
</tr>
<tr>
<td>Biochemistry and Cellular and Molecular Biology 230</td>
<td></td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>Electives</td>
<td></td>
<td></td>
<td>7</td>
</tr>
<tr>
<td><strong>Junior</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accounting</td>
<td>200</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Electives</td>
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<td></td>
<td>6</td>
</tr>
<tr>
<td>Cultures and Civilizations Elective*</td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Arts and Humanities Elective*</td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Nutrition 310, 313, 314</td>
<td></td>
<td></td>
<td>10</td>
</tr>
<tr>
<td>Communication Studies 240*</td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Microbiology 210*</td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td><strong>Senior</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electives</td>
<td></td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>Hotel, Restaurant and Tourism 326, 341</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Arts and Humanities Elective*</td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Nutrition 303, 410, 412*, 415, 416, 420</td>
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<td>17</td>
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<tr>
<td><strong>Total</strong></td>
<td></td>
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<td>120</td>
</tr>
</tbody>
</table>

*Meets University General Education Requirement.

Students must meet the University General Education Requirement for Communicating through Writing by selecting a course with a (WC) designation.

If a student successfully completes the proficiency exam for Math 119, those credit hours must be replaced with additional elective credit hours.

**Minor in Nutrition**

<table>
<thead>
<tr>
<th>Required Courses</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nutrition 100, 302, 310, 313, 314</td>
<td></td>
<td>16</td>
</tr>
<tr>
<td>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.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Total 16**
ART EDUCATION MAJOR

Students seeking licensure to teach art in the schools pursue the Bachelor of Fine Arts degree with a major in studio art or the Bachelor of Arts Degree with a major 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.

**Hours Credit**
Art Education 301 .................................................. 3
Art Education 302 .................................................. 3
Art Education 303 .................................................. 3
Art Education 400 .................................................. 3
Art Education 350 .................................................. 3
Cultural Studies in Education 400 ................................. 2
Educational Psychology 401 ....................................... 2
Special Education 402 ................................................ 2

Educational Psychology 210 ........................................ 3
Instructional Technology 486 ..................................... 3

**Undergraduate Total 25**

The following courses are taken during the post-baccalaureate professional year.

**Hours Credit**
Education 574 .......................................................... 2
Education 575 .......................................................... 12
Education 591 .......................................................... 4
Art Education 530 .................................................... 3
Art Education 540 .................................................... 3

**Graduate Total 24**

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 Educational Interpreting 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 fieldwork will not be retained in the major.

**Requirements for the Bachelor of Science in Education • Special Education Major • Educational Interpreting 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>Arts and Humanities Elective*</td>
<td>3</td>
</tr>
<tr>
<td>Social Sciences Elective*</td>
<td>3</td>
</tr>
<tr>
<td>Natural Sciences Elective*</td>
<td>3</td>
</tr>
<tr>
<td>Sociology Elective</td>
<td>6-8</td>
</tr>
<tr>
<td>Physical Education Activity or Recreation Therapy Elective</td>
<td>2-3</td>
</tr>
<tr>
<td>Quantitative Reasoning Elective*</td>
<td>6</td>
</tr>
</tbody>
</table>

**Sophomore**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication Studies 210* or 240*</td>
<td>3</td>
</tr>
<tr>
<td>Communicating through Writing (WC) Elective*</td>
<td>3</td>
</tr>
<tr>
<td>Counselor Education 380</td>
<td>3</td>
</tr>
<tr>
<td>Psychology Elective</td>
<td>3</td>
</tr>
<tr>
<td>History 241*, 242*</td>
<td>6</td>
</tr>
<tr>
<td>Arts and Humanities Elective*</td>
<td>3</td>
</tr>
<tr>
<td>Social Sciences Elective*</td>
<td>3</td>
</tr>
</tbody>
</table>

**Junior**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instructional Technology 486</td>
<td>3</td>
</tr>
<tr>
<td>Philosophy 340*</td>
<td>3</td>
</tr>
<tr>
<td>Educational Psychology 210</td>
<td>3</td>
</tr>
<tr>
<td>Psychology 300</td>
<td>3</td>
</tr>
<tr>
<td>Cultural Studies in Education 400</td>
<td>2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cultural Studies in Education 400</td>
<td>2</td>
</tr>
</tbody>
</table>
Requirements for the Bachelor of Science in Education • Special Education Major • Modified and Early Childhood Special Education Concentration

**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>Arts and Humanities Elective*</td>
<td>3</td>
</tr>
<tr>
<td>Anthropology 130*</td>
<td>3</td>
</tr>
<tr>
<td>Cultures and Civilizations Electives*</td>
<td>6</td>
</tr>
<tr>
<td>Natural Sciences Elective*</td>
<td>3-4</td>
</tr>
<tr>
<td>Sociology Elective</td>
<td>3</td>
</tr>
<tr>
<td>Physical Education Activity or Recreation Therapy Electives</td>
<td>2-3</td>
</tr>
<tr>
<td>Mathematics 113*-115* or 123*-125*</td>
<td>6</td>
</tr>
</tbody>
</table>

**Sophomore**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication Studies 210* or 240*</td>
<td>3</td>
</tr>
<tr>
<td>Literature Elective</td>
<td>3</td>
</tr>
<tr>
<td>Counselor Education 380</td>
<td>3</td>
</tr>
<tr>
<td>Psychology Elective</td>
<td>3</td>
</tr>
<tr>
<td>History 241*, 242*</td>
<td>6</td>
</tr>
<tr>
<td>Biological Science Elective</td>
<td>4</td>
</tr>
<tr>
<td>Natural Sciences Elective*</td>
<td>3-4</td>
</tr>
</tbody>
</table>

**Junior**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communicating through Writing Elective*</td>
<td>3</td>
</tr>
<tr>
<td>Instructional Technology 486</td>
<td>3</td>
</tr>
<tr>
<td>Philosophy/Religious Studies 246*</td>
<td>3</td>
</tr>
<tr>
<td>Social Sciences Elective*</td>
<td>3</td>
</tr>
<tr>
<td>Educational Psychology 210</td>
<td>3</td>
</tr>
<tr>
<td>Health 305 or 306</td>
<td>3</td>
</tr>
<tr>
<td>Cultures and Civilizations Electives*</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>Educational Methods (see advisor)</td>
<td>6</td>
</tr>
</tbody>
</table>

**Senior**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts and Humanities Elective*</td>
<td>3</td>
</tr>
<tr>
<td>Educational Interpreting 223</td>
<td>3</td>
</tr>
<tr>
<td>Education of Deaf/Hard of Hearing 410, 415, 416, 419, 425</td>
<td>16</td>
</tr>
<tr>
<td>Audiology and Speech Pathology 303 and 473 or Education of the Deaf/Hard of Hearing 424</td>
<td>.6</td>
</tr>
<tr>
<td>Audiology and Speech Pathology 494</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total 121-124**

The following courses are taken during the post-baccalaureate professional year.

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</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>
</tbody>
</table>

**Graduate Total 24**

*A physical or biological science course to complete science sequence.

*Any course with a (WC) designation satisfies this requirement.

The following courses are taken during the post-baccalaureate professional year.

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education of the Deaf/Hard of Hearing 528, 529</td>
<td>6</td>
</tr>
</tbody>
</table>

**Graduate Total 24**

*Meets University General Education Requirement.

*At least two of these three (Sociology, Political Science, Economics) should be from those Social Sciences courses that are approved for partial fulfillment of the University General Education requirement.

*Must include a total of 2 lab sciences from the Natural Sciences list.

*Intermediate-level competence.

*Students must meet the University General Education Requirement for Communicating through Writing and Communicating Orally by selecting a course with a (WC) and a course with an (OC) designation, respectively.
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 Bachelor of Art or a Bachelor of Science in the College of Arts and Sciences. While completing requirements for the baccalaureate degree, students are encouraged to take a minor in elementary education.

<table>
<thead>
<tr>
<th>Required Courses</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 430</td>
<td>2</td>
</tr>
<tr>
<td>Instructional Technology 486</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>Elementary Education 351</td>
<td>2</td>
</tr>
<tr>
<td>Elementary Education 422</td>
<td>6</td>
</tr>
</tbody>
</table>

Undergraduate Total 25

The following courses are taken during the post-baccalaureate professional year.

<table>
<thead>
<tr>
<th>Hours Credit</th>
<th>Education 574</th>
<th>Education 575</th>
<th>Education 591</th>
<th>Elementary Education 505</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2</td>
<td>12</td>
<td>4</td>
<td>6</td>
</tr>
</tbody>
</table>

Graduate Total 24

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 Bachelor of Arts or a Bachelor of Science 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>Required Courses</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>
</tbody>
</table>

Undergraduate Total 16

The following courses are taken during the post-baccalaureate professional year.

<table>
<thead>
<tr>
<th>Hours Credit</th>
<th>Education 574</th>
<th>Education 575</th>
<th>Education 591</th>
<th>English Education 461</th>
<th>Social Science Education 454, Foreign Language/ESL Education 454, English Education 459, Mathematics Education 485, Science Education 495</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2</td>
<td>12</td>
<td>4</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

Graduate Total 24

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.
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 Minority Engineering Scholarship Program in 1973 and in 1999 renamed it The Diversity Engineering Scholarship Program. The program goal is to increase significantly the number of qualified minority engineering graduates.
**College Admission Requirements**

To promote the maximum opportunity for success among entering freshmen, the College of Engineering has established college admission requirements in addition to the general university admission requirements. These additional admissions criteria are based upon both high school and standardized test performance, with an emphasis upon assessment of mathematics skills.

For admission to the College of Engineering, entering freshman students must meet the requirements for admission to the University of Tennessee, and they must also have a Success Prediction Indicator (SPI) of at least 57.0. The SPI is calculated by adding an individual’s ACT mathematics score to 10 times their high school core GPA (based on a 4.0 scale). Thus, a student with a core GPA of 3.5 and a mathematics ACT score of 28 would have an SPI of $63 = (28 + 10 \times 3.5)$. SAT scores are converted to an equivalent ACT score to perform this calculation.

Students who wish to pursue an engineering degree at the University of Tennessee, Knoxville, but do not meet the SPI criterion may enroll as University Undecided students and complete appropriate mathematics, science, and other courses before applying for admission to the College of Engineering. (See the statement regarding Transfer Students later in this section.) The College welcomes qualified transfer students from community and other colleges.

**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 and Information 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 Doughtery Hall. The Engineering Fundamentals Division and Engineering Diversity Programs office are located in Estabrook Hall. The Co-op office is in Perkins Hall. The Engineering Physics program is administered through the Physics Department in the Nielsen Physics Building.

**Office of Professional Practice**

The Office of Professional Practice which administers 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 Office of Professional Practice, 310 Perkins Hall, The University of Tennessee, Knoxville, TN 37996-2030. 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 twelve 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, biomedical engineering, and polymer engineering. The degree of Doctor of Philosophy is offered in eleven major subjects: aerospace engineering, chemical engineering, civil engineering, electrical engineering, engineering science, industrial engineering, materials science and engineering, mechanical engineering, nuclear engineering, biomedical 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, Knoxville, engineering programs are adequately prepared to enter and continue the practice of engineering. Accredited engineering programs at the University of Tennessee, Knoxville, include aerospace, biosystems, chemical, civil, electrical, biomedical, industrial, mechanical, materials science, and nuclear. Coop 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, Knoxville. 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.
- 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 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 life-long 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.

- Minors must be officially approved and described in the Undergraduate 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.
- 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.
- 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 Student 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, Knoxville.

**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.

**Transfer Students**

Transfer students, including internal University of Tennessee, Knoxville, transfers, must meet the minimum requirements stated below to be considered for admission to a major within the college.

- Must have earned a minimum 2.30 cumulative average and a C or better in each of these specific courses, or their equivalent: English 101, Chemistry 120, and Mathematics 141 (and subsequent courses in the three sequences, if taken).
- The overall record will be evaluated for quality and seriousness of purpose. An excessive number of withdrawals, incompletes, repeated courses, or failures may result in denial.

Any University of Tennessee, Knoxville, student desiring association with one of the departments of the College of Engineering should go to the departmental 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 (nine) of general education electives on a Satisfactory/No Credit (S/NC) 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 Requirement**

The University of Tennessee has established a university general education requirement that includes emphases upon building basic skills and developing broadened perspectives. These requirements apply to all undergraduate students and are listed at the front of this catalog. Engineering students should consult with their advisor and carefully select General Education Electives to insure that (1) courses meet the general education needs of their program and (2) courses meet the university general education requirements.

**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 hours from History 221 and 222, or other courses deemed suitable by the Department of History. See additional information about the American History Requirement in the Academic Policies and Procedures section of this catalog.

**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 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 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 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

J. R. Parsons, Director

Professors
Bennett, R.M., Civil and Environmental Engineering
Parsons, J.R., Mechanical, Aerospace and Biomedical Engineering

Associate Professors
Pionke, C.D., Mechanical, Aerospace and Biomedical Engineering
Scott, T.H., Nuclear Engineering

Instructor
Schleter, W.R., Engineering Fundamentals

The Engineering Fundamentals Division is the academic home for all first year engineering students. Located in Estabrook Hall, the division serves as a focus for all freshman student activities. The faculty of the division act as academic advisors and teach the principal courses in Engineering Fundamentals. These courses are designed to prepare students for entry into the sophomore year of every degree program in the college. Academic standards in the first year are necessarily high. To assist students with deficient academic backgrounds in the necessary mathematics and computer skills, supplementary courses are offered as needed.

New freshman students are assigned to the Engineering Fundamentals Division for academic advising and career counseling until they have completed the freshman curriculum. Freshman students admitted to the College of Engineering are required to designate a field of study by the end of their freshman year. As sophomores, students are assigned faculty advisors in their selected departments.

Minor in Engineering Communication and Performance

The division co-administers, with the College of Education, Health, and Human Science, the engineering communication and performance minor for engineering students desiring additional training and certification in team facilitation and organizational communication. (See College of Education, Health, and Human Sciences—Department of Educational Psychology and Counseling catalog section for requirements.)

BIOSYSTEMS ENGINEERING

Biosystems engineers use engineering science and mathematics to address opportunities and problems in biological, environmental, ecological, and agricultural systems. This ABET accredited program is offered by the Department of Biosystems Engineering and Environmental Science in the College of Agricultural Sciences and Natural Resources (see listing under that college) in cooperation with the College of Engineering.

Department of CHEMICAL ENGINEERING

John R. Collier, Head
Fred E. Weber, Undergraduate Liaison

Professors
Bienkowski, P.R., PhD .........................................................Purdue
Collier, J.R., PhD.................................................................Case Institute of Technology
Counce, R.M., PhD.................................................................Tennessee
Moore, C.F. (Distinguished Service Professor), PhD, PE........Louisiana State
Sheth, Antul C. (UTSI), PhD..............................................Northwestern

Associate Professors
Bruns, D.D., PhD.................................................................Houston
Edwards, B.J., PhD...............................................................Delaware
Frymier, P.D., PhD.................................................................Virginia
Keffer, D.J., PhD.................................................................Minnesota
Petrovan, S. (Research), PhD..............................................Iasi Tech
Wang, T.W., PhD.................................................................Massachusetts Institute of Technology
Weber, F.E., PhD.................................................................Minnesota

Adjunct Faculty
Arnold, J.S., PhD.................................................................Tennessee
Steele, W.V., PhD.................................................................Queens (Belfast)

Emeriti Faculty
Holmes, J.M., PhD.................................................................Tennessee
Prados, J.W., PhD, PE........................................................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, Knoxville, 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.

- Graduates of the UT Knoxville chemical engineering program who enter professional practice will demonstrate a high level of technical competence, along with career progression toward positions of technical or managerial leadership.

- Graduates of the UT Knoxville chemical engineering program who pursue full-time graduate or advanced professional study will complete their programs of study successfully.
• Graduates of the UT Knoxville chemical engineering program will continue their professional growth through lifelong learning.

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 hours of general education courses are required. These courses must meet the general education requirements of the university. A writing course (WC) and oral communication course (OC) 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 three of the 4 honors seminars (Chemical Engineering 307, 308, 407 and 408), Chemical Engineering 447, one of Chemical Engineering 467, 477, 488 or 498 as a technical elective and Chemistry 483 as a chemistry 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 courses numbered 310 or above 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 Chemical Engineering 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 Chemical Engineering 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>
</tr>
</thead>
<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 105, 151 or 157, 152 or 158</td>
<td>9</td>
</tr>
<tr>
<td>Sophomore</td>
<td></td>
</tr>
<tr>
<td>Chemical Engineering 200, 215, 230, 240, 250</td>
<td>16</td>
</tr>
<tr>
<td>Mathematics 200, 231, 241</td>
<td>8</td>
</tr>
<tr>
<td>Chemistry Option I</td>
<td>3</td>
</tr>
<tr>
<td>Arts and Humanities Electives*</td>
<td>6</td>
</tr>
<tr>
<td>Junior</td>
<td></td>
</tr>
<tr>
<td>Chemical Engineering 301, 310, 340, 360, 380</td>
<td>13</td>
</tr>
<tr>
<td>Chemistry 310-319</td>
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<td>Chemistry 350</td>
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<tr>
<td>Chemistry Option II</td>
<td>3</td>
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<tr>
<td><em>Technical Elective (OC)</em></td>
<td>3</td>
</tr>
<tr>
<td>Social Sciences Electives*</td>
<td>6</td>
</tr>
<tr>
<td>Senior</td>
<td></td>
</tr>
<tr>
<td>Chemical Engineering 401, 410 or 411, 445, 450, 480, 488 or 490</td>
<td>17</td>
</tr>
<tr>
<td>Physics 231*</td>
<td>3</td>
</tr>
<tr>
<td><em>Technical Electives (one course must be WC)</em></td>
<td>6</td>
</tr>
<tr>
<td>Cultures and Civilizations Electives*</td>
<td>6</td>
</tr>
<tr>
<td>Total 128</td>
<td></td>
</tr>
</tbody>
</table>

*Meets University General Education Requirement.
All electives must be pre-approved by the advisor and the department head.
Communicating through Writing and Communicating Orally by selecting a course with a WC designation and a course with an OC designation.

Department of CIVIL AND ENVIRONMENTAL ENGINEERING

Gregory D. Reed, Head

Professors

- Bennett, R.M., PhD, PE.................................................................Illinois
- Burdette, E.G. (Fred N. Peebles Professor), PhD, PE............................Illinois
- Chatterjee, A., PhD, PE.................................................................North Carolina State
- Davis, W.T. (Associate Dean), PhD........................................Tennessee
- Deatherage, J.H., PhD, PE.........................................................Tennessee
- Drumm, E.C. (Research Fellow), PhD, PE.................................Arizona
- Penamadu, D. (Research Fellow), PhD......Georgia Institute of Technology
- Reed, G.D., PhD, PE....................................................................Arkansas
- Robinson, R.B. (Fisher Professor), PhD, PE....................................Iowa State
- Urbanik, T., PhD, PE....................................................................Texas A&M
- Wegmann, J., PhD........................................................................Northwestern

Associate Professors

- Cox, C.D., PhD, PE....................................................................Penn State
- Han, L.D., PhD............................................................................California (Berkeley)
- Miller, T.L., PhD, PE....................................................................Tennessee
- Richards, S.H., PhD, PE...............................................................Tennessee
- Robinson, K.G., PhD................................................................Virginia Tech
Assistant Professors
Chu, K.H., PhD, PE ................................................... California (Berkeley)
Gentry, R., PhD, PE ..................................................... Memphis
Huang, B., PhD, PE ...................................................... Louisiana State
Schwartz, J., PhD, PE ................................................... Illinois
Emeriti Faculty
Goodpasture, D.W., PhD, PE ........................................ Illinois
Tschantz, B.A., ScD, PE .............................................. New Mexico State

Bachelor of Science Program
The department offers a Bachelor of Science Degree in Civil Engineering, accredited by the Accreditation Board for Engineering and Technology (ABET).

Undergraduate Education Mission
To prepare students to enter the general practice of civil engineering and/or pursue graduate education, the department’s undergraduate education mission is to provide a high-quality teaching and learning environment in recognized areas of civil engineering with proficiency in environmental, geotechnical, structural, transportation, and water resources engineering.

Educational Objectives
Consistent with the mission of the Department of Civil and Environmental Engineering at the University of Tennessee, Knoxville, graduates of the civil engineering program will have technical competency to pursue professional practice or graduate education; and professional competency to function in a team environment, effectively communicate, and engage in life-long learning.

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 engineering.

Graduation Requirements
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, Knoxville, 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>Freshman</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemistry 120*, 130*</td>
<td>.</td>
<td>8</td>
</tr>
<tr>
<td>English 101*, 102*</td>
<td>.</td>
<td>6</td>
</tr>
<tr>
<td>Engineering Fundamentals 105, 151 or 157, 152 or 158</td>
<td>.</td>
<td>9</td>
</tr>
<tr>
<td>Mathematics 141*, 142*</td>
<td>.</td>
<td>8</td>
</tr>
</tbody>
</table>
| *Meets University General Education Requirement.
All electives must be pre-approved by the advisor and the 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, Knoxville, is the Master of Science 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.

<table>
<thead>
<tr>
<th>Required Courses</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Civil Engineering 486</td>
<td>.</td>
<td>3</td>
</tr>
<tr>
<td>Microbiology 210</td>
<td>.</td>
<td>3</td>
</tr>
<tr>
<td>Select one from Chemistry 230, 310, or 350</td>
<td>.</td>
<td>3</td>
</tr>
<tr>
<td>Select two from Chemical Engineering 200, Biosystems Engineering 221, Civil Engineering 380, 395, or 416</td>
<td>.</td>
<td>6</td>
</tr>
<tr>
<td>Select one from Geology 202 or Philosophy 346</td>
<td>.</td>
<td>3</td>
</tr>
<tr>
<td>Select one from Geology 485, Civil Engineering 485, Environmental or Soil Sciences 444</td>
<td>.</td>
<td>3</td>
</tr>
</tbody>
</table>

Total 21
Department of ELECTRICAL AND COMPUTER ENGINEERING

Samir El-Ghazaly, Head
Paul B. Crilly, Undergraduate Liaison

Professors
Abidi, M., PhD .................................................Tennessee
Birdwell, J.D., PhD ..................................Massachusetts Institute of Technology
Bomar, B.W. (UTSI), PhD ......................Tennessee
Boudin, D.W., PhD ........................................Vanderbilt
El-Ghazaly, S.M., PhD .................................Texas (Austin)
Kuo, W. (Dean and University Distinguished Professor), PhD ....Kansas State
Lawler, J.S., PhD .........................................Michigan State
Pace, M.O., PhD ........................................Georgia Institute of Technology
Pujol, S.A., (UTSI), PhD .................................Vanderbilt
Roberts, M.J., PhD .........................................Tennessee

Associate Professors
Crilly, T.B., PhD ............................................New Mexico State
Fathy, A., PhD ...........................................Polytechnic Institute of New York
Islam, S.K., PhD ........................................Connecticut
Koch, D.B., PhD ........................................Missouri (Rolla)
Smith, L.M. (UTSI), PhD .................................Tennessee

Assistant Professors
Blalock, B.J., PhD .........................................Georgia Institute of Technology
Chiasson, J.N., PhD ....................................Minnesota
Djouadi, S. M., PhD .....................................McGill (Canada)
Elhanany, I., PhD .........................................Ben-Gurion (Israel)
Ferdjallah, M., PhD .......................................Texas (Austin)
Howlader, M.M.K., PhD .........................Virginia Tech
Kong, S.G., PhD ...........................................UCLA
Peterson, G.D., DSc ......................................Washington University
Qi, H., PhD ................................................North Carolina State
Tolbert, L.M., PhD .........................................Georgia Institute of Technology
Wu, J., PhD ................................................Notre Dame

Emeriti Faculty
Alexeff, I., PhD, PE .........................................Wisconsin
Gonzalez, R.C., PhD ..................................Florida
Green, W.L., PhD ..........................................Texas A&M
Roth, J.R., PhD .............................................Cornell

Bachelor of Science Programs

Goals

The goals of the Bachelor of Science programs in Electrical and Computer Engineering are to prepare students for entry into the profession; instill in students the capabilities required by the discipline, the recognition of the need to enhance the discipline, and the desire for life-long learning; and equip students with a general knowledge of technical and non-technical disciplines so that they are prepared for further study in other fields including professional and graduate education.

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 an understanding of the engineering sciences necessary to analyze and design complex devices and systems containing hardware and software components; a progression of design projects and tasks throughout the program; an understanding of probability and statistics, including applications, and discrete mathematics; an understanding of mathematics through differential and integral calculus; an understanding of the basic sciences including chemistry and physics; an understanding of advanced mathematics in the areas of differential equations, numerical analysis, linear algebra, and advanced calculus; an orderly student progression through the program; and achievement of the objectives of the thirteen program outcomes.

Program Outcomes

In addition to the 11 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; and 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.

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.
The Electrical and Computer Engineering Department requires at least a C in every Electrical and Computer Engineering course used for either of our undergraduate degrees, and in every required mathematics or computer science course.

Progression of electrical and computer engineering undergraduate majors to the upper-division programs of the department is competitive and is based on the space available in the department. Factors considered in the decision include overall grade point average, grades earned in courses required in the lower-division curricula of the department and College of Engineering, and seriousness of purpose and interest in departmental programs as exemplified by regular and orderly progress through the prescribed curriculum without abuse of withdrawal and course repeat privileges.

Students who take Electrical and Computer Engineering 300 in the ECE department will be evaluated during the semester they are registered for it. Transfer students for whom ECE 300 transfer credit is given may take nine (9) semester hours in departmental courses before progression evaluation. All students, whether or not they transfer in, who are not accepted into the upper-division program of the department will either be put in a temporary probationary status, or a non-progressed status in which they will not be permitted to register for any upper-division courses 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, Knoxville. At least 30 hours of upper-division courses in electrical and computer engineering and computer science must be earned at the University of Tennessee, Knoxville.

Requirements for the Bachelor of Science in Computer Engineering

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freshman</td>
<td></td>
</tr>
<tr>
<td>English 101*, 102*</td>
<td>6</td>
</tr>
<tr>
<td>Chemistry 120*</td>
<td>4</td>
</tr>
<tr>
<td>Math 141*, 142*</td>
<td>8</td>
</tr>
<tr>
<td>Electrical and Computer Engineering 206</td>
<td>4</td>
</tr>
<tr>
<td>Sophomore</td>
<td></td>
</tr>
<tr>
<td>Mathematics 231, 241, 251</td>
<td>10</td>
</tr>
<tr>
<td>Physics 231*, 232*</td>
<td>7</td>
</tr>
<tr>
<td>Electrical and Computer Engineering 255, 313</td>
<td>7</td>
</tr>
<tr>
<td>Computer Science 300</td>
<td>5</td>
</tr>
<tr>
<td>Computer Science 140</td>
<td>4</td>
</tr>
<tr>
<td>Junior</td>
<td></td>
</tr>
<tr>
<td>Electrical and Computer Engineering 315, 335</td>
<td>7</td>
</tr>
<tr>
<td>Computer Science 302, 360</td>
<td>6</td>
</tr>
<tr>
<td>Mathematics 300</td>
<td>3</td>
</tr>
<tr>
<td>Requirements for Bachelor of Science in Electrical Engineering</td>
<td></td>
</tr>
<tr>
<td>Freshman</td>
<td></td>
</tr>
<tr>
<td>English 101*, 102*</td>
<td>6</td>
</tr>
<tr>
<td>Chemistry 120*</td>
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<tr>
<td>Math 141*, 142*</td>
<td>8</td>
</tr>
<tr>
<td>Engineering Fundamentals 151 or 1571,152 or 1581, 105</td>
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</tr>
<tr>
<td>Electrical and Computer Engineering 206</td>
<td>4</td>
</tr>
<tr>
<td>Sophomore</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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<td>Electrical and Computer Engineering 255, 313</td>
<td>7</td>
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<tr>
<td>Electrical and Computer Engineering 300</td>
<td>5</td>
</tr>
<tr>
<td>Philosophy 241*, 243*, or 244*</td>
<td>3</td>
</tr>
<tr>
<td>Junior</td>
<td></td>
</tr>
<tr>
<td>Electrical and Computer Engineering 315, 325, 335, 341</td>
<td>14</td>
</tr>
<tr>
<td>Electrical and Computer Engineering 316, 336, 342, 355, 395</td>
<td>13</td>
</tr>
<tr>
<td>Social Sciences Electives*</td>
<td>6</td>
</tr>
</tbody>
</table>

* Meets University General Education Requirements.
1 Engineering Fundamentals 157 and 158 are Honors versions of Engineering Fundamentals and students in the Honors program are not required to take Engineering Fundamentals 402.
2 Can be taken at any time.
3 The Computer Engineering Senior Electives must be in Electrical and Computer Engineering courses. At most, one Computer Engineering Senior Elective can be from any 300-level Electrical and Computer Engineering courses. Approved Senior Electives are: Electrical and Computer Engineering 325, 336, 341, 415, 416, 421, 422, 423, 431, 432, 441, 442, 443, 446, 453, 471, 472, 481 and 482.

ELECTRICAL ENGINEERING MAJOR

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 400, 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, Knoxville. 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, Knoxville.

Requirements for Bachelor of Science in Electrical Engineering

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freshman</td>
<td></td>
</tr>
<tr>
<td>English 101*, 102*</td>
<td>6</td>
</tr>
<tr>
<td>Chemistry 120*</td>
<td>4</td>
</tr>
<tr>
<td>Math 141*, 142*</td>
<td>8</td>
</tr>
<tr>
<td>Engineering Fundamentals 151 or 1571,152 or 1581, 105</td>
<td>9</td>
</tr>
<tr>
<td>Electrical and Computer Engineering 206</td>
<td>4</td>
</tr>
<tr>
<td>Sophomore</td>
<td></td>
</tr>
<tr>
<td>Mathematics 200, 231, 241</td>
<td>8</td>
</tr>
<tr>
<td>Physics 231*, 232*</td>
<td>7</td>
</tr>
<tr>
<td>Electrical and Computer Engineering 255, 313</td>
<td>7</td>
</tr>
<tr>
<td>Electrical and Computer Engineering 300</td>
<td>5</td>
</tr>
<tr>
<td>Philosophy 241*, 243*, or 244*</td>
<td>3</td>
</tr>
<tr>
<td>Junior</td>
<td></td>
</tr>
<tr>
<td>Electrical and Computer Engineering 315, 325, 335, 341</td>
<td>14</td>
</tr>
<tr>
<td>Electrical and Computer Engineering 316, 336, 342, 355, 395</td>
<td>13</td>
</tr>
<tr>
<td>Social Sciences Electives*</td>
<td>6</td>
</tr>
</tbody>
</table>
Senior
Electrical and Computer Engineering 400* ............................................. 5
1Electrical Engineering Senior Electives ............................................. 12
2Technical Electives ........................................................................... 6
1Arts and Humanities Elective* ......................................................... 3
1Cultures and Civilizations Electives* ............................................. 6
1Engineering Fundamentals 402 .......................................................... 1

Total 127

*Meets University General Education Requirement.
1Engineering Fundamentals 157 and 158 are Honors versions of Engineering Fundamentals and students in the Honors program are not required to take Engineering Fundamentals 402.
2Can be taken at any time.
1Engineering Technical Electives: Chemistry 130; Materials Science and Engineering 201, 410; Mechanical Engineering 231, 321, 331, 344; Nuclear Engineering 342; Industrial Engineering 405.

Engineering Physics Program
Soren P. Sorensen, Director
Stuart B. Elston, Coordinator

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 Bachelor of Science 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

- 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
- training students in the communication, team cooperation, and problem identification and solving skills needed to practice engineering art in the modern world
- preparing students through example and experience to apply those principles and skills to the design and conduct of experiments, to the analysis and interpretation of measured results, and to the design of components, processes, and systems that meet specific, identified needs
- 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.

ENGINEERING PHYSICS MAJOR

Requirements for the Bachelor of Science in Engineering Physics

Freshman

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>English 101*, 102*</td>
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<tr>
<td>Mathematics 141*, 142*</td>
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<td>Engineering Fundamentals 105, 151 or 157, 152 or 158</td>
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<td>Chemistry 120*, 130*</td>
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Sophomore

<table>
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<tr>
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<tr>
<td>Computer Science 102</td>
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<tr>
<td>1Physics 137, 138</td>
<td>.10</td>
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<tr>
<td>1Engineering/Technical Electives</td>
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<tr>
<td>Cultures and Civilizations Electives*</td>
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Junior

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<tr>
<td>Physics 311, 312</td>
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<td>Physics 361</td>
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<tr>
<td>Physics 421</td>
<td>.4</td>
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<tr>
<td>Social Sciences Electives*</td>
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Senior

<table>
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<th>Course</th>
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<td>Physics 411, 412</td>
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<td>Physics 431, 432</td>
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<tr>
<td>Arts and Humanities Electives*</td>
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</table>

Total 125

*Meets University General Education Requirement. Students and their advisors are cautioned to ensure that Engineering, Technical, and/or General Education elective course selections meet the General Education Communicating through Writing (WC) and Communicating Orally (OC) requirements.
1Transfer students from other engineering departments may substitute Engineering Fundamentals 152 for Physics 137, Physics 231 for Physics 138, and Physics 232 for Physics 240.
2A total of 12 hours of engineering electives plus 9 hours of technical electives are required. Engineering electives should form a coherent group of courses taken in the College of Engineering. Technical electives may be taken in physics, engineering, math, other physical sciences, or astronomy.

Department of INDUSTRIAL AND INFORMATION ENGINEERING

Adeleji B. Badiru, Head

Professors

Badiru, A.B., PhD .........................................................Central Florida
Ding, F., PhD ...............................................................North Carolina State
Garrison, G.W. (UTSI), PhD.......................................North Carolina State
Kuo, W. (Dean and University Distinguished Professor), PhD ..............................................Kansas State

Associate Professors

Aikens III, C.H., PhD .................................................Tennessee
Hailey, M.L. (UTSI), PhD, PE .................................Texas Tech
Jackson, D.F., PhD, PE ...........................................Tennessee
Sawhney, R.S., PhD ..................................................Tennessee
Assistant Professors
Ford, R.E., PhD .................................................................Tennessee
Jeong, M., PhD .................................................................Georgia Tech
Kim, D., PhD .................................................................Florida
Kong, D., PhD.................................................................Penn State

Research Faculty and Staff
Halstead, P.D., BS ....................................................State University of New York

Bachelor of Science Program

Originally, 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, healthcare 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 safety, 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, Knoxville, may not be used for graduate credit in the Master of Science 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

- an understanding of fundamental engineering principles, mathematics, science, and statistics
- 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
- 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 lifelong 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 and Information Engineering Department.

INDUSTRIAL ENGINEERING MAJOR

Requirements for the Bachelor of Science in Industrial Engineering

<table>
<thead>
<tr>
<th>Freshman</th>
<th>Hours Credit</th>
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<tbody>
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<tr>
<td>Chemistry 120*, 130*</td>
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<td>Mathematics 141*, 142*</td>
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<tr>
<td>Engineering Fundamentals 105, 151 or 157, 152 or 158</td>
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<th>Sophomore</th>
<th>Hours Credit</th>
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<tr>
<td>Arts and Humanities Electives*</td>
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<td>Mathematics 200, 231, 241</td>
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<tr>
<td>Physics 231*</td>
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</table>
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. The following specific Materials Science and Engineering Program Educational Objectives were established in consultation with our students, faculty, potential employers, and alumni to assure that students are well prepared to undertake careers or graduate programs, and that our students graduate with an undergraduate education that will sustain them for their lifetime.

During the initial stages of their careers graduates will be prepared to

- Apply knowledge of the fundamentals of physical and chemical sciences, mathematics, and engineering sciences in the practice of materials science and engineering or in advanced professional studies
- Design components, systems, or processes and/or select materials for specific applications with consideration of economic, safety, environmental, and social issues
- Apply professional skills in such areas as communication, problem solving, and experience in working in diverse teams, to the practice of materials engineering in contemporary and global environs
- Use the general education component of their education for the appreciation of cultural and social values, for understanding the impact of engineering solutions on society, and for personal development

These Educational Objectives are consistent with the Mission Statement of the University. They particularly relate to “committed to the development of individuals and society as a whole through the cultivation and enrichment of the human mind and spirit.” They are consistent with EAC/ABET General Criteria to assure quality and stimulate improvement.

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 and specialty application areas such as electronic and optical 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, Knoxville, general education goals, see The University General Education Requirement section in the front of this catalog. The major in materials science and engineering specifically requires that (1) Economics 201 be taken as one of the two courses required in the Social Sciences cluster, (2) any two approved courses under the Arts or Humanities cluster, (3) any two approved courses under the Cultures and Civilizations cluster. The requirement for three courses in writing communication may be filled by the same courses as one of the two courses specified under the Social Sciences cluster.

Department of
MATERIALS SCIENCE AND ENGINEERING

Raymond A. Buchanan, Interim Head

Professors
Benson, R.S., PhD.................................................Florida State
Bhat, G.S., PhD....................................................Georgia Institute of Technology
Breece, R.R., PhD................................................Florida State
Buchanan, R.A., PhD, PE........................................Vanderbilt
Collier, B.J., PhD....................................................Tennessee
Dahotre, N.B., PhD.............................................Michigan State
Egami, T., PhD......................................................Pennsylvania
George, E.P., PhD..................................................Pennsylvania
Hansen, M.G., PhD...............................................Wisconsin
Joy, D.C., DPhil......................................................Oxford (UK)
Liaw, P.K., PhD....................................................Northwestern
Lowndes, D.H., PhD...........................................Colorado
Lundin, C.D., PhD..............................................Rensselaer Polytechnic Institute
McHargue, C.J., PhD...........................................Kentucky
Nich, T.G., PhD.....................................................Stanford
Pedraza, A.J., PhD..............................................LaPlata (Argentina)
Pharr, G.M., PhD, PE.............................................Stanford
Simpson, M.L., PhD..........................................Tennessee
Spruiell, J.E., PhD...............................................Tennessee
Wadsworth, L.C., PhD......................................North Carolina State

Associate Professors
Kit, K., PhD.........................................................Delaware
Mee, T.T., PhD.....................................................Ohio State

Assistant Professors
Choo, H., PhD...................................................Illinois Institute of Technology
Hu, B., PhD......................................................Chinese Academy of Sciences
Keppens, V., PhD..............................................Katholieke Universiteit Leuven (Belgium)
Rack, F.D., PhD................................................Florida
Rawn, C.J., PhD................................................Arizona

Emeriti Faculty
Brooks, C.R., PhD................................................Tennessee
Fellers, J.F., PhD................................................Akron
Stansbury, E.E., PhD..........................................Cincinnati

Mechanical Engineering 231 ..................................................3
Industrial Engineering 202, 250 .........................................4
Accounting 200 ..........................................................3
Statistics 251 ......................................................................3
Materials Science and Engineering 201 ..........................3

Junior
Electrical and Computer Engineering 301 ..........................3
Industrial Engineering 300, 301, 304, 310, 335, 350* ....16
Economics 204* ..........................................................4
Nuclear Engineering 203 ..................................................3
Technical Elective .......................................................3
Social Sciences Elective* ...............................................3

Senior
Industrial Engineering 306, 401, 402, 404, 427 ..............13
Industrial Engineering 405, 421, 422, 440, 450 ..............13
Cultures and Civilizations Electives* ................................6

Total 128

*Meets General Education Requirement. All General Education Electives must be pre-approved by the advisor and the department head.

Technical elective must be taken from the Department of Industrial and Information Engineering list of approved courses, or be approved by the advisor and the department head.

NOTE: Students must meet the University General Education Requirement for Communicating Orally by selecting a course with an OC designation.
405 (or other approved writing intensive course). The requirement for one course in communicating orally may be filled with Materials Science and Engineering 489 (or other approved communicating orally course).

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 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 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 attaining a minimum GPA of 2.0 in at least eight 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>
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<tr>
<th><strong>Freshman</strong></th>
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<tr>
<td>Materials Science and Engineering 101</td>
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<td>English 101*, 102*</td>
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<td>Chemistry 120*, 130*</td>
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<th><strong>Sophomore</strong></th>
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<td>Physics 231*, 232*</td>
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<td>Mathematics 200, 231, 241</td>
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<th><strong>Junior</strong></th>
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**Senior**

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<td>Materials Science and Engineering 405*(WC), 480, 489</td>
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<td>Electrical and Computer Engineering 301</td>
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<td>Engineering Fundamentals 402</td>
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<td>Technical Elective</td>
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<tr>
<td>General Education Electives*</td>
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</table>

**Total 128**

*Meets University General Education Requirement.

†Materials Science and Engineering Electives: 410, 421, 429, 445, 470, 472, 474, 484, 494, 495.

Note: Students must meet the University General Education Requirement for Communicating Orally by selecting a course with an OC designation.

**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 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.

**Required Courses**

<table>
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<th><strong>Hours Credit</strong></th>
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<tbody>
<tr>
<td>Materials Science and Engineering 201 and 480</td>
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<tr>
<td>Choose at least one: Materials Science and Engineering 320, 340, 360, 402, 410, and 472</td>
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<tr>
<td>Select 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 and 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.</td>
</tr>
</tbody>
</table>

**Total 18**
Department of MECHANICAL, AEROSPACE, AND BIOMEDICAL ENGINEERING

http://www.engr.utk.edu/mabe/

William R. Hamel, Interim Head

Professors

Arimilli, R.V., PhD ....................................................... Virginia Tech
Baker, A.J., PhD, PE ......................................................... New York
Dareing, D.W., PhD, PE ..................................................... Illinois
Frankel, J.I., PhD .............................................................. Virginia Tech
Hamel, W.R., PhD ............................................................. Tennessee
Jendrucko, R.J., PhD, PE ...................................................... Virginia
Johnson, W.S., PhD, PE ....................................................... Clemson
Keyhani, M., PhD ............................................................... Ohio State
Kihm, K.D., PhD ................................................................. Stanford
Komistek, R.D., PhD .......................................................... Memphis
Landes, J.D., PhD, PE ......................................................... Lehigh
Milligan, M.W., PhD, PE .................................................... Tennessee
Parang, M. (Associate Dean), PhD, PE ................................... Oklahoma
Parsons, J.R., PhD, PE ....................................................... North Carolina State
Smith, G.V., PhD, PE .......................................................... Penn State
Soliman, O., PhD, PE ......................................................... Tennessee
Speckhart, F.H., PhD, PE .................................................... Georgia Tech
Wasserman, J.F., PhD, PE .................................................... Cincinnati
Weitsman, Y.J. (Distinguished Professor), PhD ............................ Rensselaer Polytechnic Institute

Associate Professors

Bond, R.E., PhD ................................................................. West Virginia
English, A., PhD ............................................................... Harvard-Massachusetts Institute of Technology
Mahfouz, M.R., PhD ......................................................... Colorado School of Mines

Emeriti Faculty

Carley, T.G., PhD, PE .......................................................... Illinois
Forrester, J.H., PhD, PE ...................................................... Iowa State
Hodgson, J., PhD, PE ......................................................... Georgia Institute of Technology
Mathews, A., PhD, PE ......................................................... Illinois
Shannon, T.E., PhD, PE ...................................................... Tennessee
Snyder, W.T., PhD ............................................................ 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

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 mathematics 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 hours of lower-division engineering curriculum course work with an overall GPA of at least 2.4.

Provisional Status

Students who have completed 47 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 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 an 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, Knoxville, is required for graduation. This is in addition to the university’s graduation 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 opportunities to develop and cultivate lifelong learning skills, individual professionalism and ethics
• to prepare some students for graduate study at major universities limited by student desire and their mental ability and agility

Requirements for the Bachelor of Science in Aerospace Engineering

<table>
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<td>Economics 201*</td>
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<tr>
<td>Mechanical Engineering 331, 344, 363</td>
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<tr>
<td>Electrical and Computer Engineering 301</td>
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<tr>
<td>Philosophy 241*</td>
<td>. . . . . . . . 3</td>
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<tr>
<td>Arts and Humanities Elective*</td>
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<tr>
<td>Aerospace Engineering 410*, 422, 424, 425, 426, 429, 449</td>
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<td>Engineering Fundamentals 402</td>
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<tr>
<td>Culture and Civilizations Elective*</td>
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</tbody>
</table>

Total 128

* Meets University General Education Requirement.

Choosing from the University General Education list.

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 (4), 422 (3), 424 (4), and 425 (4). 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.

BIOMEDICAL ENGINEERING MAJOR

The biomedical engineering 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>Freshman</th>
<th>Hours Credit</th>
</tr>
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<tbody>
<tr>
<td>English 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 105, 151 or 157, 152 or 158, 202</td>
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<tbody>
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<tr>
<td>Physics 231*, 232*</td>
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<thead>
<tr>
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<tbody>
<tr>
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<td>Mechanical Engineering 331, 344, 363</td>
<td>. . . . . . . . 9</td>
</tr>
<tr>
<td>Electrical and Computer Engineering 301</td>
<td>. . . . . . . . 3</td>
</tr>
<tr>
<td>Philosophy 241*</td>
<td>. . . . . . . . 3</td>
</tr>
<tr>
<td>Arts and Humanities Elective*</td>
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Requirements for the Bachelor of Science in Aerospace Engineering

<table>
<thead>
<tr>
<th>Freshman</th>
<th>Hours Credit</th>
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<tbody>
<tr>
<td>English 101*, 102*</td>
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<tr>
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<tr>
<td>Mathematics 141*, 142*</td>
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<tr>
<td>Engineering Fundamentals 105, 151 or 157, 152 or 158, 202</td>
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<table>
<thead>
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<tr>
<td>Engineering Fundamentals 230</td>
<td>. . . . . . . . 2</td>
</tr>
<tr>
<td>Physics 231*, 232*</td>
<td>. . . . . . . . 7</td>
</tr>
</tbody>
</table>
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

**MECHANICAL ENGINEERING MAJOR**

**Requirements for the Bachelor of Science in Mechanical Engineering**

<table>
<thead>
<tr>
<th>Freshman</th>
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</thead>
<tbody>
<tr>
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<td>1Cultures and Civilizations Elective*</td>
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<tr>
<td>Materials Science and Engineering 201</td>
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<td>Economics 201*</td>
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<td>Aerospace Engineering 341</td>
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<table>
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<td>2Technical Elective</td>
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<td>Philosophy 241*</td>
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<td>2Departmental Electives</td>
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<td>1Arts and Humanities Elective*</td>
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</tr>
</tbody>
</table>

*Meets University General Education Requirement.

*Choose any course from the University General Education list.

1Departmental and technical electives must be pre-approved by the advisor and department head.

Total 128

**Department of NUCLEAR ENGINEERING**

www.engr.utk.edu/nuclear

H.L. Dodds, Head

**Professors**

Dodd, H.L. (IBM Professor), PhD, PE..........................Tennessee
Fontana, M.H. (Research), PhD, PE..........................Purdue
Groer, P.G., PhD ..............................................Vienna (Austria)
Grossbeck, M.L. (Research), PhD..............................Illinois
Mihalcz, J.T. (Research), PhD.................................Tennessee
Miller, L.F., PhD, PE.........................................Texas A&M
Myatt, F.R. (Research), PhD.................................Tennessee
Pettengill, H.J. (Research), PhD............................Michigan
Ruggles, A.E., PhD.................................Rensselaer Polytechnic Institute
Townsend, L.W., PhD.................................Idaho
Upadhyaya, B.R., PhD, PE..........................California (San Diego)

**Associate Professors**

Hines, J.W., MBA, PhD.................................Ohio State
Pevey, R.E., MBA (Emory), PhD, PE.................Tennessee
Scott, T.H., PhD, PE.................................Florida
Assistant Professors
Gribok, A.V. (Research), PhD ................................................................. IPPE (Russia)
Moussa, H.M. (Research), PhD ....................................................... Tennessee
Stephan, A.C. (Research), PhD .......................................................... Tennessee

Adjunct Faculty
DeHart, M.D., PhD ................................................................. Texas A&M
Gehin, J.C., PhD ............................................................... Massachusetts Institute of Technology
Icenhour, A.S., PhD ............................................................... Tennessee
Nichols, T.L., MD ................................................................. Tennessee
Ramsey, C.R., PhD ............................................................... Tennessee

Emeriti Faculty
Kerlin, T.W., PhD ............................................................... Tennessee
Uhrig, R.E. (Distinguished Professor), PhD, PE ................................ 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 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>Course</th>
<th>Hours Credit</th>
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<tr>
<td>Mathematics 141*, 142*</td>
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<tr>
<td>Sophomore</td>
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<tr>
<td>Arts and Humanities Elective*</td>
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<tr>
<td>Economics 201* or 207*</td>
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<td>Electrical and Computer Engineering 301</td>
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<td>Physics 231*, 232*</td>
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<tr>
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<tr>
<td>Cultures and Civilizations Elective*</td>
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<tr>
<td>Mathematics 403</td>
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<tr>
<td>Physics 341</td>
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<tr>
<td>Social Sciences Elective*</td>
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</tr>
<tr>
<td>Cultures and Civilizations Elective*</td>
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<tr>
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<tr>
<td>Materials Science and Engineering 201</td>
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<tr>
<td>Mechanical Engineering 321</td>
<td>3</td>
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<tr>
<td>Nuclear Engineering 400*, 403*, 406, 472</td>
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<tr>
<td>Philosophy 241* or 243*, or 244*</td>
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<tr>
<td>Technical Electives**</td>
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</table>

Total 126

*Meets University General Education Requirement.
**Technical electives are selected from upper-division mathematics and engineering courses and must be pre-approved by the department.
<table>
<thead>
<tr>
<th>Freshman</th>
<th>Hours Credit</th>
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<tr>
<td>Mathematics 403</td>
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<td>Nuclear Engineering 301, 304*, 342, 351, 431, 470</td>
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<td>Physics 341</td>
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<tbody>
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<td>Engineering Fundamentals 402</td>
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<td>Mechanical Engineering 321</td>
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<td>Nuclear Engineering 400*, 403*, 406, 472</td>
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<tr>
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<tr>
<td>Statistics 251, Biochemistry and Cellular and Molecular Biology 310, or Chemistry 350</td>
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</tr>
<tr>
<td>Technical Elective**</td>
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</table>

**Meet University General Education Requirement.**

**Technical electives are selected from upper-division mathematics, chemistry, and engineering courses and must be pre-approved by the department. Pre-med, pre-vet, and pre-dentistry students must also take Chemistry 360 and Chemistry 369.**
The College of Nursing at the University of Tennessee, Knoxville, 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 University of Tennessee, Knoxville, 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. 123 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**

Child and Family Studies 210 or Psychology 300; Chemistry 100-110 or 120-130; Microbiology 210 or 310 with 319 lab; Nutrition 100 or 300.

**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 arts and humanities and cultural civilizations 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 or in one of the compact states.

**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. To pass any clinical course, a student must achieve a minimum average of 70% across all examinations in the course, regardless of any other grades earned in other components of the course. If a student fails to achieve the minimum 70% average on course examinations, the final course grade recorded will be either D (60-69%) or F (under 60%).

7. 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.

8. Requirements for competence in cardio-pulmonary resuscitation are included in the Undergraduate Student Handbook.

9. At periodic intervals specified by the faculty, students must take comprehensive examinations designed to predict success on the NCLEX (licensure) examination. Any student scoring less than 850 at the end of the junior year must take a one-hour independent study course during the summer before starting the senior clinical courses. Seniors will have two opportunities to achieve 850 on an exit exam given prior to graduation. A student who does not score 850 on the second exit exam at the end of spring term will be given an “I” in 490 (Specialty Preceptorship). The student will be given the opportunity to remediate and take a third exit exam no sooner than six weeks after the second exit exam. If the student does not score 850 on the third exit exam, the student will receive a failing grade for 490 and may be eligible to retake 490 in the fall term. If a failure of 490 is a second failure in the nursing program for this student, then the student is dismissed from the BSN program.

**General Education Requirements**

The Bachelor of Science in Nursing program is designed to fulfill all General Education requirements of the university. Please see the current catalog for courses acceptable in the Arts and Humanities and Cultures and Civilizations categories.
Minor in Gerontology

An interdisciplinary undergraduate gerontology minor is available. See Health and Safety Programs in the College of Education, Health, and Human Sciences for required courses.

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>
<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 125*</td>
<td>3</td>
</tr>
<tr>
<td>Statistics 201*</td>
<td>3</td>
</tr>
<tr>
<td>Chemistry 100*-110* or 120*-130*</td>
<td>8</td>
</tr>
<tr>
<td>Arts and Humanities*</td>
<td>6</td>
</tr>
<tr>
<td>Psychology 110*</td>
<td>3</td>
</tr>
<tr>
<td>Sociology or Anthropology</td>
<td>3</td>
</tr>
<tr>
<td>Biology 101*</td>
<td>4</td>
</tr>
</tbody>
</table>

Sophomore
- Ecology and Evolutionary Biology 240 (Anatomy) | 4 |
- Biochemistry and Cellular and Molecular Biology 230 (Physiology) | 5 |
- Microbiology 210* | 3 |
- Nutrition 100* or 300 | 3 |
- Child and Family Studies 210* | 3 |
- Nursing 201 (Introduction to Nursing) | 2 |
- Cultures and Civilizations* | 6 |
- Philosophy 246* | 3 |

Junior
- Nursing 311, 319, 333, 341, 351, 361, 381, 382 | 28 |
- Nursing 403*, 404, 406, 421, 451, 452, 461, 471, 490 | 31 |

Sophomore
- Introduction to Nursing (proficiency credit for all RNs) | 2 |
- Transition to Professional Nursing | 4 |
- Pathophysiology | 4 |
- Health Assessment | 3 |
- Transcultural Nursing | 2 |
- Pharmacology I | 2 |
- Health Maintenance and Restoration: Adult | 5 |
- Health Promotion and Maintenance in Community | 5 |
- Health Promotion and Maintenance in Childbearing Families | 5 |
- Health Promotion, Maintenance, and Restorative in Children, Adolescents, and Their Families | 5 |
- Pharmacology II | 2 |
- Health Maintenance and Restoration in Mental Health | 5 |
- Professional Leadership Issues | 2 |
- Health Restoration: Adult | 4 |
- Nursing Research | 3 |
- Specialty Preceptorship | 4 |
- Electives | 3 |

Total 124

*Meets University General Education Requirement. See catalog listing for approved courses in Arts and Humanities (AH) and Cultures and Civilizations (CC).
*Transfer students need a total of at least 8 credit hours in anatomy and physiology and may graduate with 123 hours.
NOTE: Students must meet the University General Education Requirement for Communicating Orally by selecting a course with an OC designation.

The following courses are open to all university students: Nursing 202, 314, 351, 400, 402, 406, and 480.

RN Track 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 five of the major clinical nursing courses exclusive of Community Health. Courses for which credit can be obtained in this manner include 361, 403, 404, 461, and 421, and are indicated with a double asterisk. (Satisfactory/No Credit)

3. All students take the community course: 382.

4. RN-BSN students can elect to challenge 333 Health Assessment by taking the NLN Physical Assessment Exam 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, and 406 Pharmacology 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. 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 reentry must reapply to the College of Nursing. Students accepted for the master’s program can begin part-time graduate level study while in the final semester of the undergraduate program.

Total 123

*Meets University General Education requirement.
**Courses with double asterisks may receive proficiency credit or be challenged.
*RN-BSN students receiving proficiency credit for Nursing 403 (writing-intensive course) must meet the requirements for a third writing-intensive course by taking one of the courses so designated in the current Undergraduate Catalog. Philosophy 246 meets that requirement.
College of Social Work

Karen M. Sowers, Dean
Frank Spicuzza, Director

http://www.csw.utk.edu/

**Professors**

<table>
<thead>
<tr>
<th>Name</th>
<th>Institution/Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cetingok, M., PhD</td>
<td>Washington (St. Louis)</td>
</tr>
<tr>
<td>Glisson, C., PhD</td>
<td>Washington (St. Louis)</td>
</tr>
<tr>
<td>Nugent, W., PhD</td>
<td>Florida State</td>
</tr>
<tr>
<td>Orme, J., PhD</td>
<td>Washington (St. Louis)</td>
</tr>
<tr>
<td>Sowers, K., PhD</td>
<td>Florida State</td>
</tr>
<tr>
<td>Wodarski, J., PhD</td>
<td>Washington (St. Louis)</td>
</tr>
</tbody>
</table>

**Associate Professors**

<table>
<thead>
<tr>
<th>Name</th>
<th>Institution/Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bowie, S., PhD</td>
<td>Barry</td>
</tr>
<tr>
<td>Combs-Orme, T., PhD</td>
<td>Washington (St. Louis)</td>
</tr>
<tr>
<td>Cummings, S., PhD</td>
<td>Georgia</td>
</tr>
<tr>
<td>Dupper, D., PhD</td>
<td>Florida State</td>
</tr>
<tr>
<td>Egan, M., PhD</td>
<td>Maryland</td>
</tr>
<tr>
<td>Ellis, R., PhD</td>
<td>Florida International</td>
</tr>
<tr>
<td>Evans, T., PhD</td>
<td>Minnesota</td>
</tr>
<tr>
<td>Faria, G., PhD</td>
<td>Denver</td>
</tr>
<tr>
<td>Patterson, D., PhD</td>
<td>Utah</td>
</tr>
<tr>
<td>Rocha, C., PhD</td>
<td>Washington (St. Louis)</td>
</tr>
<tr>
<td>Rogge, M., PhD</td>
<td>Washington (St. Louis)</td>
</tr>
<tr>
<td>Spicuzza, F., MSSW</td>
<td>Tennessee</td>
</tr>
<tr>
<td>Staudt, M., PhD</td>
<td>Washington (St. Louis)</td>
</tr>
</tbody>
</table>

**Assistant Professors**

<table>
<thead>
<tr>
<th>Name</th>
<th>Institution/Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bolen, R., PhD</td>
<td>Texas (Arlington)</td>
</tr>
<tr>
<td>Brown, E., PhD</td>
<td>Michigan</td>
</tr>
<tr>
<td>Cho, S., MSW</td>
<td>Ewha (Korea)</td>
</tr>
<tr>
<td>Davis, C., PhD</td>
<td>UCLA</td>
</tr>
<tr>
<td>Hall, C., PhD</td>
<td>Smith</td>
</tr>
<tr>
<td>Johnson, T., PhD</td>
<td>Texas (Austin)</td>
</tr>
<tr>
<td>Jones, J., PhD</td>
<td>Clark</td>
</tr>
<tr>
<td>MacMaster, S., PhD</td>
<td>Case Western Reserve</td>
</tr>
<tr>
<td>Neely-Barnes, S., MSW</td>
<td>Washington</td>
</tr>
<tr>
<td>Strand, E., PhD</td>
<td>Tennessee</td>
</tr>
<tr>
<td>Sullivan, M., PhD</td>
<td>Georgia</td>
</tr>
<tr>
<td>Theriot, M., PhD</td>
<td>Texas (Austin)</td>
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<tr>
<td>Washington, G., PhD</td>
<td>Clark</td>
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**Research Faculty**

<table>
<thead>
<tr>
<th>Name</th>
<th>Institution/Location</th>
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<tbody>
<tr>
<td>Black, B., MSSW</td>
<td>Tennessee</td>
</tr>
<tr>
<td>Campbell, P., DSW</td>
<td>Alabama</td>
</tr>
<tr>
<td>Green, P., PhD</td>
<td>Tennessee</td>
</tr>
<tr>
<td>Hemmelgarn, A., PhD</td>
<td>Tennessee</td>
</tr>
</tbody>
</table>

**Field Coordinators**

<table>
<thead>
<tr>
<th>Name</th>
<th>Institution/Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enochs, P., EdD</td>
<td>Tennessee State</td>
</tr>
<tr>
<td>Jackson, R., MSSW</td>
<td>Tennessee</td>
</tr>
<tr>
<td>Thompson, B., MSSW</td>
<td>Tennessee</td>
</tr>
</tbody>
</table>

**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 (Bachelor of Science in Social Work) 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, Bachelor of Science in Social Work, Master of Science in Social Work, and Doctor of Philosophy, 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 Knoxville campus. This building houses the administrative and faculty offices, along with classrooms for the BSSW, MSSW and PhD 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 (PhD). Information concerning graduate programs is given in the College of Social Work Bulletin and also in the Graduate Catalog. Master’s degree programs are offered on the campus in Knoxville and in Nashville and Memphis. The PhD 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. Initial progression must be completed prior to enrollment in any 300-level social work courses.
4. 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.
5. Completion of fifty 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.

**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 Social Work 200, 250, evaluation of community service, and writing skills demonstrated in the application essay.

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. Full progression must be completed prior to enrollment in 400-level social work courses.
4. Favorable approval by the Bachelor of Science Social Work 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 recognition 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>Freshman</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>English 101, 102*</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>‘Foreign Language (Intermediate Level)*</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>Mathematics 113*</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Biology 101-102*</td>
<td></td>
<td>8</td>
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<tr>
<td>Anthropology 130*</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Psychology 110*</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Communication Studies 210*</td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>
### Sophomore
1. Women’s Studies ................................................. 3
2. Arts and Humanities (Literature)* ......... 3
3. Arts and Humanities (Philosophy)* .......... 3
4. Cultures and Civilization (History Sequence)* .. 6
5. Psychology 220 ................................................. 3
6. Social Work 200, 250 ................................. 6
7. Economics 201* ............................................. 4
8. Political Science 101 ........................................... 3

### Junior
8. Social Work 312, 313, 314* ......................... 9
9. Social Work 316 ................................................. 3
10. Foreign Studies .............................................. 3
11. Mathematics 115* ........................................... 3
12. Social Work 310, 380 ................................. 6
13. Child and Family Studies 220* ................. 3

### Senior
15. Social Work 480, 481 ................................. 12
16. Social Work 460 .............................................. 3
17. Regional Studies ............................................. 3
18. Electives .......................................................... 6

9. Meets University General Education requirement.
10. Educational Interpreting 223 American Sign Language I and 226 American Sign Language II will fulfill the Foreign Language requirement but will not meet the General Education requirement.
12. One course selected from: Classics 253; English 201, 202, 221, 222, 231, 232, 233, 251, 252, 253, 254.
13. One course selected from: Philosophy 110, 111, 242, 244, 245, 246, 290.
14. One of the following sequences may be selected: African and African-American Studies 235-236; Asian Studies 101-102; History 241-242; History 261-262; Latin American Studies 251-252; Medieval Studies 201-202; Religious Studies 101-102.
15. One course selected from: Anthropology 313, 316, 319; Classics 381, 382; German 302; Geography 372, 373, 379; German 363; History 320, 360, 361, 374, 375; Philosophy 320; Political Science 350, 361; Religious Studies 332, 386; French 432; Sociology 442, 444; Women’s Studies 360.
16. One course selected from: Anthropology 312; English 441; Geography 363, 365; History 439, 444, 449; Political Science 315; Religious Studies 351.

Total 120
The University Honors Program provides an outstanding curriculum for a community of engaged, academically superior scholars in any major. Specially designed interdisciplinary seminars fulfill part of the UT General Education requirements for Basic Skills and Broadened Perspectives. These courses, exclusively for University Honors students, explore significant themes as they are perceived by and represented in various disciplines: they are small, discussion-based, and directed by outstanding UT faculty. University Honors seminars add intellectual breadth to the depth obtained in a student’s major, by emphasizing the interrelatedness of human knowledge. All three-credit University Honors seminars also fulfill part of the general education requirements; therefore, graduating with the Honors distinction usually can be accomplished in the same amount of time as a non-Honors degree.

The goals of the University Honors Program are
(1) to promote habits of serious, worthwhile, intellectual pursuit
(2) to engender a lifelong appreciation of, and dedication to, learning
(3) to help channel the energies of future leaders into service to the community
(4) to help provide students with a global perspective

Eligibility

High school seniors with superior academic credentials (3.75 core high school grade point average and 29 ACT or 1280 SAT score) will be automatically sent an application for admission to University Honors. Though the great majority of University Honors students are accepted as freshmen, a small number of first-year UT students will be considered for acceptance in their second year. To be eligible to apply, UT freshmen must take at least one departmental honors course and maintain an overall grade point average of 3.7. Transfer students who have completed fewer than 30 credit hours in good standing in another Honors Program with at least a 3.7 grade point average are eligible to apply. Students in all majors are eligible to be participants in University Honors.

Requirements

In addition to required work in their respective colleges, Honors Scholars complete

- English 118 (required), except for incoming students with a 4 or 5 on the Literature-Composition AP test, or with dual-enrollment credit for English 101 and 102
- One 1-credit University Honors seminar (University Honors 100)
- Five 100- or 200-level honors courses selected from University Honors seminars or special topics or departmental honors offerings
- Two upper-division honors courses in their major (Honors-byContract* or Honors Independent Study may be substituted)
- One 1-credit Senior Project (University Honors 458)
- One 3-credit Senior Project (University Honors 499)

TOTAL: 26-30 credit hours of honors coursework

*Honors by Contract: Customized approach in an upper-division course in the student’s academic major, through completion of a written contract delineating additional effort. The contract must be submitted to UHP by the third week of the semester. Limited to University Honors students.
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. AskUs.Now (www.lib.utk.edu/refs/askus-now) 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.

*Data describe the Knoxville campus, excluding the Law Library.
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 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 (including the papers of James Agee and Alex Haley), 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 UT 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.
University Studies

Neil Greenberg, Chair

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

University Studies 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 Applied Phenomenological Studies; Technology, Society, and the Common Good; the Gerontology Colloquy; the Interdisciplinary Colloquy on Rhetoric; Psychoanalysis and the Humanities; Evolution and Culture; the Creativity Group; Critical Theory; Appalachian Forum; Cultural Diversity; the Great Conversation; Spirituality and Health; and Educational Technology. 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 courses 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
Army ROTC

Professor of Military Science and Leadership
Lieutenant Colonel Robert Walsh, Special Forces

Assistant Professors
Lieutenant Colonel Ron Borden, BS........................................Northern Michigan
Captain Derek Bean, BS.........................................................Columbus State
Captain Russell Turner, BS.....................................................Maryland
Captain Loretta Hanson, BA....................................................Seattle

Senior Army Instructors
Master Sergeant Jeffrey Barnt
Sergeant First Class Samuel Shubert
Sergeant Telly O’Neil

Mission
To commission the future officer leadership of the United States 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, Knoxville

The military program at the University of Tennessee, Knoxville, pre-dates that of any other state university in the country, having been introduced in 1844. In that year, Professor Albert Miller Lea, a United States 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, Knoxville, 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 United States 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. UT Knoxville 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 the 1862 Act of Congress required instruction in military science and leadership.
The National Defense Act of 1916 changed the old military organization into an ROTC unit. For the first time, the federal government began to pay a part of the uniform cost for basic course students. The government provided uniforms and other equipment 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, Knoxville.

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; 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 Knoxville 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 United States 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 five-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 or sophomore standing. Students with higher standing require 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); three-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 hours.
   d. Be under 30 years old at time of graduation and commissioning (waiverable).
   e. Be enrolled as a full-time student, either at the University of Tennessee, Knoxville, or at a near by 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.

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 Officership (4); 430 U.S. Military History, 1754 to Present or 303 Military History (3).

In addition to a bachelor’s 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. The monthly stipend runs from $250 to $400 for contracted cadets. 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, Knoxville, 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 $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 simultaneous membership program 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. Simultaneous membership program participation with national guard or reserve forces is one weekend per month and two weeks each year. Cadets participating in the simultaneous membership program are eligible for tuition reimbursement up to $4,500 per year.

**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, and Friday. The exercise program focuses on flexibility, muscular strength, and cardio respiratory endurance. Any University of Tennessee, Knoxville, student may take the course by registering for Army ROTC Fitness Program 103.

**Military Science and Leadership Curriculum**

**Normal Course**

<table>
<thead>
<tr>
<th>Freshman</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Military Science and Leadership 101, 102</td>
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<tr>
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<tr>
<td>Sophomore</td>
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<tr>
<td>Military Science and Leadership 201, 201</td>
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<tr>
<td>Military Science and Leadership 103</td>
<td>1</td>
</tr>
<tr>
<td>Junior</td>
<td></td>
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<tr>
<td>Military Science and Leadership 301, 302</td>
<td>8</td>
</tr>
<tr>
<td>Military Science and Leadership 103</td>
<td>1</td>
</tr>
<tr>
<td>Senior</td>
<td></td>
</tr>
<tr>
<td>Military Science and Leadership 401, 402, 430, 303</td>
<td>11</td>
</tr>
<tr>
<td>Military Science and Leadership 103</td>
<td>1</td>
</tr>
</tbody>
</table>

**Total 33**
The Professor of Military Science and Leadership may approve variations to these sequences of study 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 hours/GPA for entrance into basic military studies practicum (Military Science and Leadership 200)—30-59.9 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 GPA.
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/](http://web.utk.edu/~rotc800/)

**Air Force ROTC Program**

*Professor of Air Force Aerospace Studies*

Colonel Owen Ragland, MS ....................................................Embry-Riddle

**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. They then may compete for entry into the professional officer course, which is normally taken during the last two years of college. Selection into the professional officer course 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, 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, 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 professional officer course 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, Knoxville, 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 $250 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/](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, Knoxville, AFROTC Leadership Grants are designed to attract and retain high quality students to the Air Force ROTC program for future positions of leadership within their service and our country. These grants are intended to complement other AFROTC 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 three-year AFROTC scholarship winners.

Up to twenty $500 leadership grants are available each year and are open to scholarship winners and any full-time student enrolled in the AFROTC program. Awarding of these leadership grants will be determined by the Professor of Aerospace Studies who will evaluate each candidate in the following areas—ACT/SAT scores, AFOQT test scores, GPA, physical fitness scores, leadership activities, and recommendations from people who can attest to the applicant’s leadership experience and skills.

Pay and Entitlements

All cadets enrolled in AFROTC are furnished texts and uniforms. Qualified junior and senior cadets with a cumulative grade point average (GPA) of 2.5 or better may receive a $3,000 scholarship that is applied toward their tuition and books. Additionally, these cadets receive a monthly stipend ranging from $250 to $400. In addition, they are paid mileage to and from field training, plus pay commensurate with active duty rates while at field training.

Active Duty Commitments

Commissioned graduates going into non-flying duties will be required to serve four years of active duty. Those graduates going into pilot assignments will be required to serve ten years active duty after completion of pilot training. Those graduates going into navigator assignments will be required to serve six years active duty after completion of navigator training.

This information is subject to change. For the most up-to-date information regarding AFROTC, contact AFROTC Detachment 800, 974-3041.

Air Force Aerospace Studies Curriculum

To receive a commission as a second lieutenant in the United States Air Force through the Air Force ROTC program, a student must successfully complete a four- or six-week field training encampment and take or receive credit for the following courses. Attendance at a six-week field training encampment satisfies all freshman and sophomore level course requirements.

<table>
<thead>
<tr>
<th>Freshman</th>
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<tr>
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<tr>
<td>Aerospace Studies 303, 304 (Leadership Laboratory)</td>
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<table>
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<th>Hours Credit</th>
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<td>Aerospace Studies 401, 402</td>
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<tr>
<td>Aerospace Studies 403, 404 (Leadership Laboratory)</td>
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</table>

Professional Development Training Programs

To help cadets gain knowledge of the challenges in leadership and human relations encountered by a junior air force officer and to motivate them toward an air force career, cadets have the opportunity to participate in a variety of summer professional development training programs. Many of these programs are highly competitive. Some of these programs are described below.

Academy Freefall Parachute Training

A 12-day program conducted at the United States Air Force Academy. Successful completion of program results in a cadet receiving parachutist rating.

Air Force Academy Soaring

A 15-day program designed to give cadets the chance to experience the basic fundamentals of flight in non-powered glider operations. Cadets receive instruction in basic flight through ground school and actual flight, leading up to and possibly including cadet solo.

Army Airborne Training

Training lasts for 24 days and is physically and mentally demanding. Upon successful completion, cadets are awarded the parachutist rating. All training is conducted at Fort Benning, Georgia.

ASSIST

Rising sophomore cadets spend two weeks touring an active duty air force base and shadowing junior officers in various career fields.

British Exchange

Cadets are attached to a British university air squadron for 17 days of training and orientation at various Royal Air Force bases in the United Kingdom.

Combat Survival Training

A 20-day program incorporating combat, basic aircrew, and water survival training. Training is conducted at the United States Air Force Academy, Colorado Springs, Colorado.

Field Engineering and Readiness Lab

Provides opportunities for cadets with entry-level civil engineering courses to get hands-on work experience in the civil engineering career field. Training consists of two weeks working with civil engineering at an air force base and three weeks hands-on construction activities at the Air Force Academy, Colorado Springs, Colorado.
Foreign Language Immersion

Provides cadets majoring in a foreign language the opportunity to receive intensive language and cultural training. Training lasts for four weeks in various overseas countries.

Nurse Orientation Program

During a four-week internship program at Wilford Hall United States Air Force Medical Center, Lackland Air Force Base, Texas, nursing cadets receive hands-on experience and practical knowledge of air force nursing.

Operation Air Force

A three-week program of general orientation and shadowing of junior officers in various career fields. Program is conducted at air force installations throughout the United States.

Pentagon Internship Program

A three-week program to provide cadets an opportunity to work in the Pentagon. Students selected for the program gain problem-solving experience working with both military and civilian personnel on real world issues and participate as a team member with professionals in their chosen field of study.
Advanced Studies

College of Veterinary Medicine

Michael J. Blackwell, Dean
James J. Brace, Associate Dean, Academic Programs
Robert N. Moore, Associate Dean, Research and Graduate Programs
Leon N. D. Potgieter, Associate Dean, Hospital Operation
Dennis R. Geiser, Assistant Dean, Outreach and Organizational Development

The College of Veterinary Medicine, established in 1974, offers a professional curriculum leading to the degree of Doctor of Veterinary Medicine (DVM). The college offers graduate studies leading to the degrees of Master of Science (MS) and Doctor of Philosophy (PhD) with a major in Comparative and Experimental Medicine. Residency training programs in the various clinical specialties are also offered.

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.

College of Law

Thomas C. Galligan, Jr., Dean
John Sobieski, Jr., Associate Dean
Rachael E. Inman, Assistant Dean
http://www.law.utk.edu

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 JD-MBA program with the College of Business Administration and JD-MPA 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 West Cumberland Avenue, Knoxville, Tennessee 37996-1810. The completed application should be received before February 1 of the year of requested admission.
Office of Graduate Studies

Anne Mayhew, Vice Chancellor for Academic Affairs and Dean of Graduate Studies
Mary E. Papke, Associate Dean of Graduate Studies
S. Kay Reed, Assistant to the Dean
Joan Dolence, Thesis/Dissertation Consultant

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 Specialist in Education degree, doctoral work in 44 fields, two 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, Knoxville, is available in the Graduate Catalog, published annually and on the Graduate Studies Web site: http://web.utk.edu/~gsinfo.
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

UT Conference Center
University Outreach and Continuing Education
The University of Tennessee
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
University Conference Center

Norvel Burkett, Interim Dean and Director
Robert Gibbs, Associate 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 video-conferencing to locations worldwide. Arrangements can also be made to receive (downlink) programming 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
UT Conference Center
University Outreach and Continuing Education
The University of Tennessee
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 (three to five 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
University Outreach and Continuing Education
The University of Tennessee
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

Department of PROFESSIONAL AND PERSONAL DEVELOPMENT

Mary F. Jerger, Interim Director

The Department of 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 (including two Oak Ridge classrooms), and on-line. Classes 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 several specialized certificate programs. Personal interest topics range from creative writing 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 which provides 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
Department of Professional and Personal Development
University Outreach and Continuing Education
The University of Tennessee
313 Conference Center Building
600 Henley Street
Knoxville, Tennessee 37996-4137
Phone: (865) 974-0150
Fax: (865) 974-0154
E-mail: ProfessionalPgms@utk.edu
Web Site: www.outreach.utk.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, Operations and Management Science 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 and registration forms, contact the Distance Education Program at

Distance Education and Independent Study
University Outreach and Continuing Education
The University of Tennessee
Suite 208
600 Henley Street
Knoxville, Tennessee 37996-1525
Phone: (865) 974-1534 or (800) 670-8657
TDD: (865) 974-5078
Fax: (865) 974-4684
E-mail: DistEducation@tennessee.edu
Web Site: anywhere.tennessee.edu
Courses of Instruction

Courses fulfilling the University General Education Requirement are designated as follows:

(AH) Arts and Humanities
(CC) Cultures and Civilizations
(OC) Communicating Orally
(NS) Natural Sciences
(QR) Quantitative Reasoning
(SS) Social Sciences
(WC) Communicating through Writing

ACCOUNTING (009)

200 Foundations of Accounting (2) Introduction to financial and managerial accounting theory and practice with emphasis on the role of accounting information in business decisions. Prerequisite to all other courses in Accounting.

207 Honors: Foundations of 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.

301 Financial Reporting (3) Theory and practice for preparing and using financial statements. Introduction to professionalism and ethics in accounting. Prereq/Coreq: Finance 301 and Business Administration 342 or consent of the instructor.

310 Financial Reporting and Analysis (3) Theory and practice that underlies the preparation, analysis, and use of financial statements. Prereq: 301 with a grade of C or better or consent of instructor.

321 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. Prereq/Coreq: 301 or consent of instructor.

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. Prereq/Coreq: 301 with a grade of C or better or consent of instructor.

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. Prereq: 311 with a C or better.

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. Prereq/Coreq: 301 with a grade of 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) Prereq: Consent of instructor. May be repeated. Maximum 6 hours. Satisfactory/No Credit grading only.

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.

310 Advertising and Public Relations Design (3) Study, use, and application of design, color, type, and layout styles as they affect concept development in the creation of promotional materials. Analysis of organizational goals and how they mold strategic and conceptual development. Application of relevant computer software for creation of promotional material. Prereq: 250 or Public Relations 270 and admission to the School of Advertising and Public Relations.


350 Advertising Creative Strategy (3) Basic concepts of creative strategy with intensive practice in developing creative strategy statement, writing and designing advertisements, and judging creative work. Prereq: 250, 310, Communication and Information 150.

380 Advertising Professional Seminar (1) Exploration of career choices in mass communications. Resume and letter writing, interviewing, and portfolio preparation. Prereq: 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. Prereq: 350, 360.

470 Advertising Campaigns (3) Group-based development, execution and evaluation of an advertising campaign for a regional or national client. Prereq: 450, Public Relations 270.

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. Prereq: 360.

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. Prereq: Progression as a major in the School of Advertising and Public Relations. May be repeated once. Satisfactory/No Credit grading only.

493 Independent Study (1-3) Individual study in a specialized area under the supervision of a faculty member. Prereq: Consent of instructor.

AEROSPACE ENGINEERING (018)

201 Aerospace Seminar (1) An overview of aerospace engineering with lectures, laboratory demonstrations, and field trips. Aerospace history, aircraft and space flight fundamentals, propulsion techniques, wind tunnel testing, biomedical issues in aviation and space flight. Prereq: Sophomore standing in Aerospace Engineering or consent of instructor. Satisfactory/No Credit grading only.

341 Fluid Mechanics I (3) Introduction to fluid flow concepts; hydrostatics; development of mass, momentum, and energy conservation laws in integral and differential form; dimensional analysis and similarity; viscous laminar and turbulent flows in pipes; introduction to boundary layers. Prereq: 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. Prereq: 341, Electrical and Computer Engineering 301. Coreq: Mechanical Engineering 363.

351 Compressible Flow (3) One-dimensional internal flow with shocks, friction and nonadiabatic conditions. Two-dimensional external flows. Prereq: 341, Mechanical Engineering 332.


410 Professional Development (2) Topics relating to professional responsibility, communications, and organization. Formal oral presentation by each student on an engineering topic chosen by the student and approved by the instructor. Prereq: English 102, Senior standing. (OC)

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 (4) Solar system, orbital mechanics, propulsion, atpheric entry including thermal protection materials, human factors in space flight, the space environment, and current topics. Prereq: 351. Coreq: Mechanical Engineering 331.


429 Aerospace System Design (3) Synthesis and design of a complete aerospace system. Participation in team design effort including formal presentations and design report. Prereq: 422, 425, 426.

449 Aerospace Engineering Laboratory (3) 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, 425.

494-495 Selected Topics in Aerospace Engineering (1-4, 1-4) Problems and topics related to developments and practice in aerospace engineering. Prereq: Consent of instructor.

AFRICAN AND AFRICAN-AMERICAN STUDIES (022)

162 Art of Africa, Oceania, and Pre-Columbian America (3) (See Art History 162.) (AH)

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 societies, the institution of slavery, the development of African-American culture, the beginnings of African-American protest tradition, and the Civil War and Reconstruction. (SS)

202 Introduction to African-American Studies (3) Multidisciplinary approach to the African-American experience from 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. (SS)

233 Major Black Writers (3) (See English 233.) (AH)

235 Introduction to African Studies (3) Multidisciplinary approach to the study of African traditions, cultures, religions, political economies, precolonial democracies, and states form the first through the sixteenth century. Writing-emphasis course. (CC)

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. Writing-emphasis course. (CC)

310 Introduction to African-American Music (3) (See Music History 310)

315 The African Diaspora (3) (See Anthropology 315.)

319 Caribbean Cultures and Societies (3) (See Anthropology 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.)

352 African-American Religion in the United States (3) (See Religious Studies 352.)

353 Topics in African-American Religion (3) (See Religious Studies 353.)

371-372 African History (3,3) (See History 371-372.)

373 African Religions (3) (See Religious Studies 373.)

379 Geography of Africa (3) (See Geography 379.)

381 History of South Africa (3) (See History 381.)

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. Writing-emphasis course. Prereq: 201-202 and senior standing.

442 Comparative Poverty and Development (3) (See Sociology 442.)
443 Topics in Black Literature (3) (See English 443.)
445 The African-American Experience from the Colonial Period to the Civil War (3) (See History 445.)
446 The African-American Experience from the Civil War to the Present (3) (See History 446.)
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 Black African Politics (3) (See Political Science 452.)
461 Art of Southern and Eastern Africa (3) (See Art History 461.)
462 Art and Archaeology of Ancient Africa (3) (See Art History 462.)
463 Arts of the African Diaspora (3) (See 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 school 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. Writing-emphasis course. (Same as Women's Studies 483.)
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) (See 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 if 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 administrating, organizing, conducting, and evaluating youth education programs in agricultural and extension education. Prereq: Consent of instructor.
345 Program Planning in Agricience Education (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. Course will include a lab component. Prereq: 201, 211 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.
434 Methods of Teaching Agriscience (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. Course will include a lab component. Taken in the fall prior to student teaching. Prereq: 201, 211, 345 or consent of instructor.
435-436 Student Teaching in Agricultural and Extension Education (6,6) Full-time teaching practicum in an approved high school program. Applied practices needed by agricultural education teachers. Prereq: Admission to Teacher Education and 201, 211, 345, 434.
440 Communication Techniques in Agriculture (3) Elements of effective use of mass media in Agricultural and Extension Education. Effective technical writing and presentation strategies for agricultural audiences. Prereq: English 101 and 102, junior standing. (WC)
450 Agricultural Leadership Development (3) Identification of styles and roles of leadership; development of leadership techniques and skills required in working with organizations and youth groups; methods of resolving conflict, of communicating, of guiding and evaluating; and ethical considerations for leaders. Prereq: Junior standing.
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. Prereq: 211, or consent of instructor. May be repeated. Maximum of 6 hours.
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. 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.
212 The Agribusiness Firm (3) Introduction to agribusiness firm characteristics and decision-making. Overview of economic principles and the basic functions of management: planning, organizing, controlling, and directing. Specific topics include firm 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.
315 Agricultural Law (3) Survey of legal topics related to agribusiness operations and production agriculture in Tennessee. Topics include introduction to legal system, torts, property, contracts, farm and business organization, environmental and natural resource regulation, estate planning, and effective utilization of legal counsel. Prereq: Junior standing.
320 Agricultural Microeconomics (3) Application of microeconomics to agriculture. Production, consumption, firm behavior, and efficiency in the food and fiber industries. Prereq: 212, 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, junior standing.
337 Honors: Economics of Agricultural Biotechnology (3) Meets at same time as Agricultural Economics 330 but requires additional work in the form of article reviews and a research paper. Prereq: Economics 201, junior standing.
342 Farm Business Management 1 (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, 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, 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, Economics 201.
356 Marketing Team Participation (1-2) Participation in the development of a total marketing plan for a product sold to or by farmers. 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 AgriMarketing Conference. Prereq: Consent of instructor. May be repeated. Maximum 6 hours.

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 agribusiness decision making. Analysis of contemporary issues in the field of agricultural economics.

412 Agricultural Finance (3) Macroe-finance, financial objectives, acquisition of debt and equity funds, capital investments, capital allocation, debt repayment, credit analysis, borrower and lender loan application analysis, insurance strategies, computer applications, kinds and sources of agricultural credit, and financial intermediation. Prereq: 212, 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. Economic rationale and effects of policy. Historical development and current characteristics of commodity, credit, food, and trade policy. Prereq: 320 or consent of instructor.

442 Agribusiness Management (3) Advanced concepts in developing business; and marketing plans and in applied management principles such as inventory control and pricing techniques. Discussion of management issues including going international, employee supervision, management succession and guerilla marketing. Teamwork emphasized in managing an agribusiness firm through game simulation. Written and oral presentation required. Prereq: 342 or Accounting 200; Economics 201.

444 Economics of Precision Farming Technologies (3) Economic rationale for precision farming technologies. Topics include technology adoption, production economics, development of decision-making tools and the use of spatial data for management of crop production systems. Prereq: Economics 201, Agriculture and Natural Resources 290.

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, 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: Economics 201.

492 Off-Campus Internship (1-3) Pre-approved supervised experience with firm or organization in the field. Prereq: Junior standing or consent of advisor. May be repeated for a different experience up to a maximum of 6 hours. Satisfactory/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. Prereq: Junior standing. May be repeated. Maximum 6 hours.

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. A, B, C, 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 integration of computer applications such as spreadsheets, databases, presentation graphics, word processing, and other applicable software as needed for problem analysis and reporting. 2 hours and 1 lab. Prereq: Satisfactory performance on a skills/placement test. For details, see advisor.

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 4 hours. A, B, C, No Credit grading.

330 Leadership Development in Agriculture and Natural Resources (1) Readings on leadership and personal development, communication techniques, and/or personality types. Enrollment limited to College Ambassadors. May be repeated. Maximum 4 hours. A, B, C, No Credit grading.

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, current practices in agriculture, forestry, and food handling, and practices related to quality of life issues and landscape design. May not be used to satisfy directed elective requirements.

491 International Experience in Agriculture and Natural Resources (1-15) Credit for formalized 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.

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.

AIR FORCE AEROSPACE STUDIES (094)

101-102 The Air Force Today (1,1) Survey that focuses on the organizational structure and missions of the Air Force; officer/partisan and professionalism; and includes an introduction to communicative 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. Satisfactory/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 an 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. Satisfactory/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 2-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 situations as a means of demonstrating and exercising practical application 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 and management principles to this course.

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 reviews 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 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 interdisciplinary study and interpretation. Considers both mainstream and minority cultures. Writing-emphasis course.

312 Popular Culture and American Politics (3) (See Cinema Studies 312: Political Science 312.)

320 American Cultures (3) (See Anthropology 320.)

334 Film and American Culture (3) (See Cinema Studies 334; English 334.)

343 Race and Ethnicity (3) (See Sociology 343.)

345 Collective Behavior and Social Movements (3) (See Sociology 345.)

355 Religion and Culture in the United States (3) (See Religious Studies 355.)

356 The 1960s in America (3) (See History 356.)

381 Introduction to Folklore (3) (See English 381.)

410 Topics in American Culture (3) Content varies. May be repeated once.

420 Political Attitudes and Behavior (3) (See Political Science 420.)

423 Geography of American Popular Culture (3) (See Geography 423.)

424 American Humor (3) (See English 424.)

450 Seminar in American Studies (3) Intensive study of a major issue in American Studies scholarship.

469 Freedom of Speech (3) (See Communication Studies 469.)

491 Foreign Study (1-15)

492 Off-Campus Study (1-15)

493 Independent Study (1-15)

ANIMAL SCIENCE (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. 2 hours and 1 lab. Prereq: Biology 102 or 130.

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. Two 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, lousing, 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 trailering, stall maintenance, internal and external parasite control, credit for identification techniques, routine vaccinations and first aid. Safety for both horse and handler will be emphasized. Three 2-3 hour 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, pregnancy, parturition, initiation of lactation and maintenance of the dry period, artificial control of reproduction and lactation. 2 hours and 1 lab. Prereq: Biology 102 or 130. (Same as Biochemistry and Cellular 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.


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. 2 hours and 1 lab. Prereq: 220.

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. 1 hour and 2 labs. Prereq: 320.

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. 2 hours and 1 lab. Prereq: 330 and introductory computer course.
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. 2 labs. Prereq: Consent of instructor. 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 improvement programs. Management evaluated in terms of production response and economic returns. Comparisons made to small ruminant, forage-based production systems. 2 hours and 1 lab. Prereq: Completion of Animal Science sophomore and junior core courses or consent of instructor.

482 Dairy 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. 2 hours and 1 lab. Prereq: Completion of Animal Science sophomore and junior core courses or consent of instructor.

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. 2 hours and 1 lab. Prereq: Completion of Animal Science sophomore and junior core courses.

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. 2 hours and 1 lab. Prereq: Completion of Animal Science sophomore and junior core courses.

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. 2 hours and 1 lab. Prereq: Consent of instructor.

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 blood metabolites commonly used to monitor health and nutritional status. 2 lectures and 1 lab. Prereq: Consent of instructor.

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. Maximum 6 hours. 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.

ANTHROPOLOGY (122)

110 Human Origins (3) Survey of humanity’s background, fossil primates, fossil human remains, and living races of humankind. (NS)

120 Prehistoric Archaeology (3) Introduction to methods and techniques used to identify and date archaeological cultures, reconstruct past lifeways and describe cultural evolution. Overview of the prehistory of Africa, western Europe, southwest Asia, and the Americas from earliest dated human cultures to rise of complex civilizations. (CC)

130 Cultural Anthropology (3) Major concepts and methods in the study of culture; survey of cross-cultural similarities and differences in subsistence, social organization, economic, political, and religious institutions; language, ideology and arts. Contributions of anthropology to resolving contemporary human problems. (SS)


302 Anthropology of Religion (3) (See Religious Studies 302.)

304 Genetics and Society (3) (See Biochemistry and Cellular and Molecular Biology 306.)

305 Evolution and Society (3) (See Ecology and Evolutionary Biology 305.)

310 North American Indians (3) Comparative overview of Indian cultures of North America. Topical coverage ranges from prehistory and aboriginal lifeways to problems resulting from contact and acculturation. Writing-emphasis course. Prereq: 130 or consent of instructor.

311 Southeastern Indians (3) Survey of Southeastern American Indian cultures at the time of European contact. Emphasis on Cherokee culture and on the social, economic, and religious organization of aboriginal groups. Prereq: 130 or consent of instructor.

312 Appalachian Culture (3) Traditional Southern Appalachian subsistence patterns and economy, social organization, beliefs and values, folklore and customs; socio-cultural impacts of industrialization and modernization. Writing-emphasis course. Prereq: 130 or consent of instructor.

313 Peoples and Cultures of Mesoamerica (3) Pre-Columbian and Hispanic cultures of Mexico, Guatemala, Belice, El Salvador and Honduras. Patterns of cultural continuity and cultural change throughout Mesoamerica’s history. Writing-emphasis course. Prereq: 130 or consent of instructor. (Same as Latin American Studies 313.)

315 The African Diaspora (3) An overview of anthropological perspectives on people of African descent and the impact of an African presence on societies in the Americas. The sociocultural experiences of U.S. African-Americans and their counterparts elsewhere in the hemisphere are situated in the context of a broader diaspora. Writing-emphasis course. Prereq: 130 or consent of instructor. (Same as African and African-American Studies 315.)

316 Peoples and Cultures of South America (3) An introduction to contemporary analysis and debate on South America that places the concept “culture” in historical perspective and discusses the anthropological notion of “people” within the complexity of indigenous and black social formations. Writing-emphasis course. (Same as Latin American Studies 314.)

319 Caribbean Cultures and Societies (3) Anthropological approaches to key aspects of Caribbean history, sociocultural pluralism, racial and class stratification, patterns of economic development, and local and national-level political processes. Writing-emphasis course. Prereq: 130 or consent of instructor. (Same as African and African-American Studies 319; Latin American Studies 319.)

320 American Cultures (3) Anthropological perspectives on cultural diversity in America, including the immigrant experience and expressions of ethnicity, intercultural relations, occupational and interest group subcultures. Writing-emphasis course. (Same as American Studies 320.)

321 Indians of Northwest North America (3) Survey of American Indian cultures found in the Northwest Coast, Columbia Plateau, and Northern Great Basin culture areas. Writing-emphasis course.

322 Topics in Ethnography (3) Overview of culture patterns and ethnographic research on selected social groups or culture areas. Prereq: 130 or consent of instructor. May be repeated. Maximum 6 hours.

357 Junior Honors in Anthropology (3) Analytical, integrative review of current directions of research and theory in anthropology. Open to students with an overall GPA of 3.2 who have fulfilled progression requirements to declare a major in anthropology.

360 North American Prehistory (3) Prehistoric cultures of North America from initial occupation of the continent to European contact. Writing-emphasis course.
COURSES OF INSTRUCTION

361 Historical Archaeology (3) Historical archaeology of Euro-American, African-American, and Asian American cultures in the United States from 15th to 20th centuries.

362 Principles of Archaeology (3) Research strategies used in developing method and theory, constructing cultural histories, identifying site function and settlement-subistence patterns, and evaluating explanations of cultural change. Prereq: 120 or consent of instructor.

363 Prehistory of Tennessee (3) Archaeological principles and theory illustrated in history of archaeological research in Tennessee and through survey of prehistoric Indian cultures from initial occupation of the state to European contact. Writing-emphasis course. Prereq: 360 recommended.

373 African Religions (3) (See Religious Studies 373.)

400 Readings in Anthropology (1-6) Problem-oriented directed readings in anthropology. Prereq: Anthropology majors with senior standing or consent of instructor. May be repeated. Maximum 6 hours.

410 Principles of Cultural Anthropology (3) Exploration and illustration of major concepts, theories, and methods in cultural anthropology, with application to analysis of specific ethnographies. Prereq: 130.

411 Linguistic Anthropology (3) Basic linguistic concepts applied to research in cultural anthropology, particularly investigation of relationships between language and culture. Prereq: 150, Linguistics 200. (Same as Linguistics 411.)

412 Folklore in Anthropology (3) Introduction to anthropological study of folklore, using folklore and folklore materials from various tribal, peasant, and complex societies. Prereq: 130 or consent of instructor.

413 Dynamics of Culture (3) Definition and in-depth study of major forms of culture change, ranging from evolution and diffusion to religious revitalization and political revolt. Continuity and change in diverse cultural settings examined through use of archaeological, ethnographic, and contemporary case studies. Prereq: 130 or consent of instructor.

414 Political Anthropology (3) Examination of the organization and dynamics of power and politics in both stateless and state-level societies. The role of symbols, rituals, and ideologies in producing and reproducing power relations. The relationship between actors (individuals) and structures. The encapsulation of traditional political forms and systems within modern states. Writing-emphasis course. Prereq: 130 or consent of instructor.

416 Applied Anthropology (3) Introduction to principles, practice and ethics of anthropology applied to practical problems in non-academic settings. Overview of career opportunities in various domains of applied anthropology. Prereq: 130 or consent of instructor.

430 Fieldwork in Archaeology (3-9) Practicum work in archaeological data recovery and analytical techniques. Prereq: Consent of instructor. May be repeated. Maximum 9 hours.

431 Ethnographic Research (3) Conceptual and practical exploration of methods and techniques cultural anthropologists use in fieldwork. Prereq: 130 or consent of instructor.

435 Historical Archaeology Laboratory (3) Laboratory procedures for the processing, identification, and interpretation of artifacts from historical settings. Artifactual material from historic East Tennessee sites will be used for class projects. Prereq: 361 recommended.

436 Cities and Sanctuaries of the Greek and Roman World (3) (See Classics 436.)

442 Intensive Survey of the Archaeology of the Prehistoric Aegean (3) (See Classics 442.)

443 Intensive Survey of the Archaeology of Greece (3) (See Classics 443.)

444 Intensive Survey of the Archaeology of Etruria and Rome (3) (See Classics 444.)

450 Current Trends in Anthropology (3) Analytical, integrative review of current directions of research and theory in anthropology. May be repeated. Maximum 6 hours.

457 Senior Honors in Anthropology (3) Research and writing of the senior honors thesis. Open to students with overall GPA of 3.2 and an anthropology GPA of 3.5 who have completed 357 with a grade of B or better.

459 Selected Topics in Anthropology (3) Theoretical issues in anthropology for undergraduate students. Topics may include practical experience or laboratory study of anthropological materials. Prereq: Either 110, 120, 130 or consent of instructor. May be repeated. Maximum 6 hours.

462 Early European Prehistory (3) Origins and evolution of human culture in Europe through the beginnings of settled life. Primary focus on Paleolithic/Mesolithic chronology and lifeways. Writing-emphasis course. Prereq: 120 or consent of instructor.

463 Rise of Complex Civilizations (3) Development of complex societies in Old World from origins of agricultural economics to rise of States. Focus on Mesolithic, Neolithic, and Metal Age lifeways in Africa, Europe, and Asia. Writing-emphasis course. Prereq: 120 or consent of instructor.

464 Principles of Zoarchaeology (3) Basic osteological studies of major vertebrate groups, with emphasis on the aboriginal’s use of animals in subsistence and culture. Identification and interpretation of archaeologically derived molluscan and vertebrate remains, with introduction to laboratory use of comparative collections. Prereq: 120 or consent of instructor.

465 Urban Archaeology (3) Field archaeology and interpretation of archaeological remains on historic urban sites in the United States. Course content will include lectures and field and laboratory research on urban sites in East Tennessee. Prereq: 361 recommended.

480 Human Osteology (4) Intensive examination of the human skeleton. Prereq: 110 or consent of instructor. 3 hours and 1 hour lab.

481 Museum Studies I: Museums, Purpose and Function (3) (See Art 481.)

482 Museum Studies II: Exhibition Planning and Installation (3) (See Art 482.)

484 Museum Studies III: Field Projects (1-12) (See Art 484.)

485 Oral Biology (4) Intense examination of human dentition and oral skeletal structures including dento-facial embryology/growth, histology, gross tooth morphology and pathology. Prereq: 480 or consent of instructor.

490 Primate Evolution (3) Living and fossil primate taxonomy, ecology, and comparative anatomy. Study of primate fossil record with emphasis on the origin or major primate lineages. Prereq: 110 or consent of instructor.

491 Foreign Study (1-15)

492 Off-Campus Study (1-15)

493 Independent Study (1-15)

494 Primate Behavior (3) Social organization and behavior of selected primates including group composition, size, and structure; patterns of mating; other social interactions; communication; and cultural behavior. Application of primate studies to human ethology. Prereq: 110 or consent of instructor.

495 Human Paleontology (4) Intensive survey of the human fossil record from the earliest hominid remains to the earliest origins of modern human form. Prereq: 110 or consent of instructor.

496 Biology of Human Variability (3) Introduction to human populations; human adaptation, biological features of major human races, relationships of major groups to one another. Prereq: 110 or consent of instructor. (Same as African and African-American Studies 496.)

ARABIC (127)

121-122 Elementary Standard Modern Arabic I, II (5.5) (See Asian Studies 121-122.)

221-222 Intermediate Modern Standard Arabic I, II (5.5) (See Asian Studies 221-222.) (CC)

ARCHITECTURE (133)

101 Introduction to the Built Environment (3) Scope and definition of the built environment in relation to contemporary society, building industry, and allied-design professions. Architectural design as a creative process. Orientation to courses and programs of the school. Coreq: 171.


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 Perception (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, including figure drawing and campus visits. Coreq: 171.

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.

211 History and Theory of Architecture I (3) Architecture and ideas of building and community form in major world cultures from the prehistoric era to about 1500 AD. (AH)

212 History and Theory of Architecture II (3) Architecture and ideas of building and community form from 1500 AD to the mid-twentieth century. Prerequisite: 211. (AH)

213 History and Theory of Contemporary Architecture (3) Architectural thought in design practice in late twentieth century. Examples of contemporary works and review of theoretical issues. Prereq: 212. (WC)

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, three-dimensional modeling, and desktop publishing. Prereq: Physics 161.

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. Prereq: 212.


272 Architectural Design II (6) Studies in architectural space. The role of function, habitation, movement, structure and scale as determinants of spatial form explored through a series of design projects ranging in scale from furniture 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 hours 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 hours studio. Prereq: 281.


332 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: 331.


336 Structures in Architecture II (3) Continuation of analysis and design of simple structures in wood, steel and concrete. Introduction of building codes, loading tables and handbooks for selection of structural members. Prereq: 335 or special permission.

341 Environmental Control Systems I (4) Heating, ventilating, and air-conditioning systems, including passive and active solar energy systems. Plumbing and fire protection systems. Prereq: 231, 232.


346 Principles of Environmental Control II (3) Introduction to electrical design and wiring, lighting and acoustics in buildings. Prereq: 180, Master of Architecture admission.


401 Architectural History/Theory I (3) Architectural History/Theory I (3) Survey of architectural history and theory from earliest beginnings to about 1600 in Europe, Asia, and the Americas. Examination of theoretical ideas, building forms, and urban patterns in cultural and historical context. Prereq: Master of Architecture 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 through the present day. Examination of theoretical ideas, building forms, and urban patterns in cultural and historical context. Prereq: 401 and Master of Architecture 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.

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 change in urban form and design.

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.

415 Medieval Architecture (3) History of architecture from the decline of Rome to the beginning of the Renaissance. (Same as Medieval Studies 415.)

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 History of American Architecture (3) Consideration of architecture and city planning in the United States from the pre-Columbian period until the mid-twentieth century.

425 Special Topics in Architecture (1-6) Faculty initiated courses. Topics vary. Prereq: consent of instructor. May be repeated. Maximum 12 hours.

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.
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 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 cultural expression, and character of setting. Prereq: 480, satisfactory completion of a self-directed project proposal and program for that project, 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, 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) Research and design projects conducted in various locations abroad.

492 Off-Campus Study (1-15) Studies conducted under direction of architect or expert in an allied profession, in service to public service organizations or agencies of government, and public groups. Not a design course elective.

493 Independent Study in Architecture (1-6) Individual studies and projects under faculty direction. Credit adjusted to complexity and level of effort required. May be repeated once. Prereq: Consent of dean.

494 Foreign Studies Sketchbook (1-3) Investigations of historic urban fabric and architecture in various locations abroad. Analysis and sketch records in sketchbook format required.

496 Design Studies in Krakow (6) Studio meets in Krakow, Poland. Design studies responding to specific community conditions in an European city.

497 Sketchbook Study of Architecture in Central Europe and Krakow (3) Analysis and sketch records in sketchbook format required. Lectures and field trips related to Krakowian, Polish, and European architecture and urban traditions.

498 Fine Art Studies in Krakow (3) Studio meets in Krakow, Poland. Fine arts investigations related to architectural design.

ART (140)

101 Studio Fundamentals: Drawing and Design (3) Introduction to basic drawing media, concepts and techniques and to the elements and principles of pictorial organization.

103 Studio Fundamentals: Three-Dimensional Design (3) Projects dealing with real space and three-dimensional materials. Primarily for art, architecture, art education, and interior design and housing majors.

150 The Idea of Graphic Design (3) An overview of design as visual message-making and as an act of cultural interpretation. Contemporary and historic design and its forms are examined, along with an introduction to design and creative concepts, and the role of criticism and theory. Student assessment will come from exams, short writings and visual laboratory projects. Open to non-majors.

200 Special Topics (2-4) Student- or instructor-initiated course offered at convenience of department. May be repeated.

295 Intermediate Design and Color (3) Further exploration of basic techniques of two-dimensional design, with emphasis on color theory and technique. Prereq: 101, 103.

299 Special Topics (3) Student- or instructor-initiated course offered at convenience of department. May be repeated. Maximum 12 hours.

481 Museum Studies I: Museums, Purpose and Function (3) Purposes, functions and development of museums of art, history, natural and applied science. (Same as Anthropology 481.)

482 Museum Studies II: Exhibition, Planning and Installation (3) Exhibition concept development and implementation. Exhibition design and installation techniques. Publicity, production, matting and framing, shipping and storage. Prereq: 481 or consent of instructor. (Same as Anthropology 482.)

484 Museum Studies III: Field Projects (1-12) Special field projects including restoration, preservation, registration, and other related research on or off campus. Prereq: 481 and 482 and consent of instructor. May be repeated. Maximum 12 hours. (Same as Anthropology 484.)

491 Foreign Study (1-15)

492 Off-Campus Study (1-15)

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.

499 Special Topics (3) Student- or instructor-initiated course offered at convenience of department. May be repeated. Maximum 12 hours.

ART CERAMICS (135)

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.

221 Ceramics: Handbuilding I (3) Introduction to handbuilding, glazing, clay preparation and firing. Prereq: Art 101, 103.


225 Portfolio Practicum—Handbuilding (3) Intense post-introductory studio experience to develop work for application to Ceramics Portfolio Review 320. Art majors only. Prereq: 221, 222, and consent of department.

226 Portfolio Practicum—Throwing (3) Intense post-introductory studio experience to develop work for application to Ceramics Portfolio Review 320. Art majors only. Prereq: 221, 222, and consent of department.

229 Ceramics: Special Topics (3) Student or instructor initiated courses to be offered at convenience of department. Prereq: Consent of instructor. May be repeated. Maximum 12 hours.

320 Ceramics: Portfolio Review (0) Review of prior work in ceramics. Successful completion required prior to registration for junior and senior courses. Prereq: Art 101,103; Art History 172, 173, 162, 183 (choose two); Art Ceramics 221; Art Sculpture 241; all with a grade of C or better. Prereq/Coreq: Art 295. Coreq: 222. Satisfactory/No Credit grading only.

322 Ceramics: Throwing II (4) Continued investigation of throwing with an emphasis on the development of individual ideas and expression. Prereq: 320.


424 Ceramics: Clays and Glazes (3) Clay chemistry, clay bodies, glaze theory, and calculation. Formulating, mixing and testing of clay bodies and glaze formulas. Prereq: 320.

429 Ceramics: Special Topics (3) Student or instructor initiated courses to be offered at convenience 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.

**ART DESIGN / GRAPHIC (136)**

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.

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. Emphasis on visual problem-solving. Prereq: Art 101, 103, 150; Art History 162 or 172 or 173 or 183. In special circumstances, permission of instructor may be granted in place of prereq. May be repeated. Maximum 6 hours.

252 Beginning Graphic Design II (3) Continuation of 251 and the exploration of the elements and principles of graphic design including typography and layout. Survey of graphic design tools, materials and processes. Emphasis on visual problem-solving. Prereq: 251. Prereq/Coreq: 151 or permission of instructor. May be repeated. Maximum 6 hours.

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; Art 150. 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: 350, 356.

352 Intermediate Graphic Design II (3) Investigation of sign, symbols, marks and identity systems. Prereq: 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 6 hours.

450 Design in Culture (3) A consideration of design as an act of cultural interpretation. Historic and contemporary design and design issues are examined through presentations, discussions, readings, and writings. Required of all upper-division graphic design majors on the BFA track. Open to other students by consent of instructor. Student assessment will come from writing, projects, presentations and contributions to class discussion.

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/Coreq: 452.

456 Graphic Design Practicum (1-12) 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.

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 DRAWING (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, 312 or consent of instructor. May be repeated. Maximum 8 hours.

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, 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, supplemented by individual and group critiques and weekly life drawing sessions. Prereq: 8 hours of Art Drawing 311 with a grade of C or better or consent of instructor. Total of 12 hours required for undergraduate students in the drawing concentration. May be repeated. Maximum 12 hours.
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, professional literature, contemporary issues, simulation and micro teaching situations. Prereq: 301 and admission to Teacher Education Program.

ART HISTORY (139)

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.) (AH)

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. (AH)

172 Western Art I (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. (AH)

173 Western Art II (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. (AH)

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. (AH)

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. (AH)

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. (AH)

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. (AH)

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.

376 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. Writing-emphasis course. May be repeated with consent of instructor. Maximum 6 hours.

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 BC 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 1450 (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 Judaic Studies 431; Medieval 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 Durer; early printmakers. Writing-emphasis course. (Same as Medieval Studies 441.)

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, 1250-1450 (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 451.)


453 Art of Southern Europe, 1575-1700 (3) Concentrated study of Caravaggio, Bernini, and Italian Baroque developments in all media. Spanish Baroque painting and sculpture with special attention to Velazquez. 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. Writing-emphasis course. Prereq: 172, 173 (or their Honors equivalents) or consent of instructor.

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 AD 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.)
Investigation of the progression of abstraction through more recent developments in 20th-Century Painting and Sculpture in Europe (3) The innovations of Manet, Impressionism, Cézanne, Post-Impressionism, Art Nouveau, Symbolism. 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. Writing-emphasis course. Prereq: 172, 173 (or their Honors equivalents), or consent of instructor. 475 History of 19th-Century Painting and Sculpture in Europe (3) The evolution of Romanticism, Neoclassicism, and Realism in Europe, including the innovations of Manet, Impressionism, Cézanne, Post-Impressionism, Art Nouveau, Symbolism. Writing-emphasis course. 476 History of 20th-Century Painting and Sculpture in Europe (3) Development of the Modern and Post-Modern movements in Europe. Investigation of the progression of 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 1960s. Writing-emphasis course. 485 History of Printmaking (3) Survey of prints from the 16th century to the present. Emphasis on 20th century in Europe and the United States. Prereq: 172, 173. 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. 433 History of Film and Modern Art (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 film as an art form with an emphasis on individual projects. Prereq: 235, 330 or permission 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, 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: 330, 341, and consent 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: 330, 342, and consent of instructor. 443 Large Format Photography I (4) Studio course introducing theory and techniques of use of large format camera in photography. Prereq: 231, 330, 331. May be repeated. Maximum 8 hours. 444 Digital Photography I (4) Studio course introducing theory and techniques of use of digital photography. Prereq: 231, 330, 331. May be repeated. Maximum 8 hours. 445 Digital Photography III (4) Advanced painting with computer-based media on paper stressing individual concepts and personal approaches. Total of 12 hours required for undergraduate students in the painting concentration. Prereq: 315. May be repeated. Maximum 12 hours.
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 PRINTMAKING (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.

265 Screen Printing I (3) Screen printing as a fine art medium including development and application of various basic stencils in compositional printing. Prereq: Art 101. May be repeated. Maximum 12 hours.

266 Monoprint and Monotype (3) Investigation of traditional and contemporary techniques. 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, embedding, 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, 173 with a grade of C or better. Satisfactory/No Credit grading only.

361 Intermediate Print Workshop (1-6) Individual and collaborative studio work encompassing theory and practice in intaglio, lithography, relief printing, screenprinting, monoprint, papermaking, book arts and/or photoprint processes. Prereq: One of the following: 262, 263, 264, 265, 266, 269, 291 and 360 or consent of instructor. May be repeated. Maximum 12 hours.

362 Advanced Print Workshop (1-6) Individual and collaborative studio work encompassing theory and practice in intaglio, lithography, relief printing, screenprinting, monoprint, papermaking, book arts and/or photoprint processes. Prereq: 361 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.

**ART SCULPTURE (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, technical processes, and history of sculpture. Materials include wood, plaster, steel and plastics. Prereq: Art 103.

242 Figuring the Body (3) Sculpture that involves the human figure, directly or indirectly. Issues relating to the body and personal identity will be explored through various media. Prereq: Art 101, 103; Art Sculpture 241, or consent of instructor.

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, 241.

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, 241.

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 241

249 Special Topics in Sculpture (3) Instructor initiated course offered at convenience of department. Prereq: Art 101, 103; and Art Sculpture 241 with a grade of C or better. 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); Art Sculpture 240, 241, 245 and 246 with a grade of C or better. Satisfactory/No Credit grading only.

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 12 hours.

342 Advanced Mold-Making and Casting (3) Further exploration of casting methods with an emphasis on metals including bronze and aluminum. Prereq: 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 Advanced 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.

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.

**ASIAN LANGUAGES (144)**

131-132 Elementary Chinese I, II (5,5) Must be taken in sequence. (Same as Chinese 131-132.)
151-152 Elementary Japanese I, II (5,5) Must be taken in sequence. (Same as Japanese 151-152.)

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 Language 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. (Same as Chinese 231-232.) (CC)

251-252 Intermediate Japanese I, II (5,5) Prereq: 151-152 or consent of instructor. Must be taken in sequence. (Same as Japanese 251-252.) (CC)

311-312 Chinese Literature in English Translation (3,3) 311-CLASSICAL literature. 312-Vernacular and modern literature. Writing-emphasis course. (Same as Chinese 311-312.)

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. (Same as Japanese 313-314.)

315 Asian Film (3) An examination of Asian national cinemas in historical and cultural context. Taught in English. Writing-emphasis course. (Same as Cinema Studies 315.)

331-332 Advanced Chinese I, II (4,4) Prereq: 231-232 or equivalent or consent of instructor. Must be taken in sequence. (Same as Chinese 331-332.)

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. (Same as Japanese 351-352.)

413 Topics in Japanese Literature (3) When content varies, may be repeated for credit. In English with readings in Japanese for minors. Writing-emphasis course. (Same as Japanese 413.)

431 Readings in Chinese Literature (3) Prereq: Mastery of intermediate-level of Chinese or consent of instructor. May be repeated. Maximum 9 hours. (Same as Chinese 431.)

451 Readings in Pre-Modern Japanese Literature (3) Prereq: Mastery of intermediate-level Japanese or consent of instructor. (Same as Japanese 451.)

452 Readings in Modern Japanese Literature (3) Prereq: Mastery of intermediate-level Japanese or consent of instructor. (Same as Japanese 452.)

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. (CC)

121-122 Elementary Modern Standard Arabic I, II (4,4) Taped language program. Must be taken in sequence. Enrollment by permission of instructor. (Same as Arabic 121-122.)

141-142 Elementary Modern Hebrew I, II (4,4) Taped language program. Must be taken in sequence. Enrollment by permission of instructor. (Same as Hebrew 141-142.)

161-162 Elementary Persian I, II (4,4) Taped language program. Must be taken in sequence. Enrollment by permission of instructor. (Same as Persian 161-162.)

221-222 Intermediate Modern Standard Arabic I, II (4,4) Taped language program. Must be taken in sequence. Enrollment by permission of instructor. (Same as Arabic 221-222.) (CC)

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. (Same as Hebrew 241-242.) (CC)

261-262 Intermediate Persian I, II (4,4) Taped language program. Prereq: 161-162 or equivalent or consent of instructor. Must be taken in sequence. (Same as Persian 261-262.) (CC)

322 Classical Islam (3) (See Religious Studies 322.)

333 Islam in the Modern World (3) (See 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)

ASTRONOMY (150)

151 A Journey through the Solar System (4) Study of Earth’s nearest astronomical neighbors including the sun, planets, asteroids, and comets. Seasons, solar and lunar eclipses, motion of the planets in the night sky, recent planetary space probe discoveries, development of our modern understanding of the origin and evolution of our solar system and its place in the universe, discovery of extrasolar planets in distant solar systems. A minimum of mathematical analysis. Only one of the three courses (151, 161, or 217) may be taken for credit. (NS)

152 Stars, Galaxies, and Cosmology (4) Life and death of stars, exotic objects including white dwarfs, supernovae, neutron stars, pulsars, and black holes. Structure of galaxies, formation of large-scale structure in the universe, and cosmological issues such as the big bang, dark matter, dark energy, and the past, present, and projected future behavior of the universe in light of modern astrophysics and particle physics. Conditions for the existence of life in the universe and the possibility of extraterrestrial intelligence. A minimum of mathematical analysis. Only one of the three courses (152, 162, or 218) may be taken for credit. (NS)

161 A Journey through the Solar System with Laboratory (4) Study of Earth’s nearest astronomical neighbors including the sun, planets, asteroids, and comets. Seasons, solar and lunar eclipses, motion of the planets in the night sky, recent planetary space probe discoveries, development of our modern understanding of the origin and evolution of our solar system and its place in the universe, discovery of extrasolar planets in distant solar systems. A minimum of mathematical analysis. Principles for interpretation of astronomical observations are reinforced in laboratory. Only one of the three courses (151, 161, or 217) may be taken for credit. (NS)

162 Stars, Galaxies, and Cosmology with Laboratory (4) Life and death of stars, exotic objects including white dwarfs, supernovae, neutron stars, pulsars, and black holes. Structure of galaxies, formation of large-scale structure in the universe, and cosmological issues such as the big bang, dark matter, dark energy, and the past, present, and projected future behavior of the universe in light of modern astrophysics and particle physics. Conditions for the existence of life in the universe and the possibility of extraterrestrial intelligence. A minimum of mathematical analysis. Principles for interpretation of astronomical observations are reinforced in laboratory. Only one of the three courses (152, 162, or 218) may be taken for credit. (NS)

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. (NS)

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 Acoustics 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, 494. May be repeated. Maximum 6 hours.
455 Problems in Speech Pathology (1-3) Prereq: Consent of instructor.
461 Introduction to Language Pathology in Children (3) Etiology and diagnosis, and treatment of language impairments in children. Prereq: 320 or consent of instructor.
473 Introduction to Audiologic Assessment (3) Basic principles of clinical audiometry; pure tone, speech, masking and overview of special auditory tests. Prereq: 303.
475 Appraisal 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 Introduction to Aural Habilitation/Rehabilitation of the Hearing Impaired (3) Introduction to psychosocial aspects, amplification components/characteristics, assistive devices, speech acoustics, speech perception, speechreading, parent-infant, pre-school school years of children, communication impairments/handicaps/remediation of adults, effects of aging/remediation on the elderly, and case studies. Prereq: 305, 473 or equivalents or consent of instructor.
499 Senior Seminar in Communication Sciences and Disorders (3) Capstone Experience; A writing emphasis course exploring the forces shaping the profession of communication disorders in the past, present and future. Prereq: Consent of instructor and senior standing.
420 Advanced Topics in Biochemistry and Cellular and Molecular Biology (3) Selected topics of current research interest, e.g., allosteric theory and control of protein function, immunochemistry, 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. Writing-emphasis course. Prereq: 410.

421 Cell and Tissue Structure and Function (4) Study of animal cells and tissues at light and electron microscope levels. 2 hours and 2 labs. Prereq: Biology 140.

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 technologies. Experimental modules include techniques used in cell isolation, purification, 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/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. Prereq: Prereq/Coreq: 410, 419. May be repeated. Maximum 12 hours.

457 Honors Thesis (1-3) Written preparation and oral presentation of faculty-supervised student research conducted in BCMB 452 or equivalent. Prereq: Admission to honors program in BCMB and BCMB 452 or equivalent. Cannot be counted toward the requirements for the BCMB concentration. Cannot be repeated.

465 Human Genetics (3) Genetic and molecular principles and problems of human inheritance. Prereq: Biology 240.

471-481 Biophysical Chemistry (3,3) Physicochemical principles with applications to biological systems. 471—Thermodynamics; chemical equilibrium; solution chemistry; transport; electrochemistry; kinetics; enzyme 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) (See Exercise Science 480.)

492 Off-Campus Study (1-6) No more than two credits of 492 will count toward the Biological Sciences BCMB major. Satisfaction/No Credit grading only.

493 Independent Study (1-3) Independent study under the direction of a faculty member. Consent of instructor required. May be repeated. Maximum 12 hours. A minimum of 3 hours may be applied to the major.

BIOLOGY (190)

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: macromolecules 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, and 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. (NS)

111-112 General Botany (4,4) 111 – Introduction to taxonomy through tree identification: basic organization and function of cells, respiration, photosynthesis, genetics (including meiosis, mitosis, Mendelian inheritance); survey of plant kingdoms (bacteria, algae, fungi, mosses, ferns, conifers, and flowering plants). 112 – Plant growth, anatomy, growth regulation; uptake and transport; origin of life and mechanisms of evolution; ecology, importance to humans and environmental concerns. Students receiving credit for 111-112 may not receive credit for Biology 101-102. (NS)

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 and 1 hour lab each week. Credit not available for students with credit for both 101 and 102. (NS)

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 mixing solutions, as well as introduce modern methods for analysis of cell components such as electrophoresis and centrifugation. Prereq: 111-112 or 130, Chemistry 120. Coreq: Chemistry 130. (NS)

157 Honors Experimental Biology (4) Integrated lecture/laboratory practicum designed as an inquiry-based course with hands-on experimentation to explore the nature of scientific research and unifying concepts and principles of Biology. Properties of life and common themes in living systems using plant and animal subjects for experimentation. Prereq: Permission of Instructor. Credit not available for students with credit for Biology 101 and 102. (NS) (OC)

202-203 Inside the Biological Sciences (1,1) Presentations by faculty and other biology professionals emphasizing applied biological research. Familiarizes students with diverse nature 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: 111-112 or 130-140 or 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: 111-112 or 130-140 or 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. Nationally 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. May be repeated. Satisfactory/No Credit grading only.

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 required and elective experience 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 12 hours. Prereq: 394-395.
BIOMEDICAL ENGINEERING (192)

271 Biomedical Engineering Principles (3) Application of engineering principles and methods to problem solving in the life sciences and medicine. Prereq: Engineering Fundamentals 152.

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 321, Aerospace Engineering 341.

320 FDA Regulation of Biomedical Devices (2) 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. Maximum 6 hours. Prereq: Senior standing or consent of instructor.


410 Professional Topics (2) Topics relating to professional responsibility, communications, and organization. Formal oral presentation by each student on an engineering topic chosen by the student and approved by the instructor. Prereq: English 102, senior standing. OC

430 Biomedical Engineering Laboratory (4) This course provides experience with the unique problems 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.


469 Biomedical Engineering Design II (3) 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.

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 assist with design, construction, testing, analysis, and presentation of project. Will also include background in engineering design, engineering project management, and engineering design tools. 2-hour lab. Prereq: Engineering Fundamentals 151.

201 Career Opportunities (1) Activities and opportunities in the fields of specialization; required training for each area; projected career activities.

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). 2 hours and 1 lab. Prereq: Chemistry 120, Engineering Fundamentals 152.

231 Biochemistry for Engineers (3) Fundamentals of biochemistry presented from an engineering point of view and applied to solve engineering-related problems. Topics to be covered include fundamental organic chemistry of amino acids, carbohydrates, lipids and other important biochemicals; the role and control of pH in biological solutions; fundamental biochemistry of proteins and enzymes; introduction to bioenergetics and metabolic pathways, and the replication, transcription, and translation of DNA. Prereq: Chemistry 120, Mathematics 141.

321 Biothermodynamics, Heat and Mass Transfer (3) Application of thermodynamics to biological systems; heat transfer, with emphasis upon conduction and convection applications; introduction to diffusion mass transfer. 2 hours and 1 lab. Prereq: 221, Nuclear Engineering 203. Coreq: Mathematics 241.

401 Biosystems Engineering Design I (2) First course of a capstone design sequence. Review of fundamental engineering principles and design proposal generation. Design proposals will include preliminary engineering analyses, extensive documentation, and multiple individual and group presentations. Prereq: Senior standing and at least two of 411, 416, 431, 451, or consent of instructor. (OC)

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. Design Submission of design to external engineering design competition or display required. 2 hour lecture, 2-hour recitation (weekly project reports) and 4-hour lab. Prereq: 401.

404 Engineering Project Management (3) Fundamentals and theory of engineering design and engineering project management, use of computerized project management tools, ethical responsibilities and contemporary issues in biosystems engineering, incorporation of economic considerations in engineering design, individual professional and portfolio development. Coreq: 401 and 444.

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. 2 hours and 1 lab. Prereq: Mechanical Engineering 231, 321. Coreq: 321.

416 Hydrologic and Water Quality Engineering (3) An introduction to hydrology including: hydrologic variability, precipitation, evapotranspiration, infiltration, runoff, erosion, water quality and non-point pollution, energy dissipation, streamflow measurement, hydログraphs, routing, open channel flow, and urban hydrology. Prereq: Civil Engineering 390 or Aerospace Engineering 341. (Same as Civil Engineering 416.)

431 Bioprocess Engineering (3) Development of interdisciplinary bioprocess engineering; basics of biology in an engineering perspective; enzymatic reaction kinetics; metabolism and bioenergetics; cell growth kinetics and product formation; engineering principles applied to bioprocess engineering including mass balance, energy balance, and reaction kinetics; reactor design in systems; introduction to materials; practical aspects of bioprocess engineers and process development. 2 hours and 1 lab. Prereq: 321.

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 project. Design content: 1 hour. 3 hours and 1 lab. Prereq: Electrical Engineering 301.

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. 1 hour and one 3-hour lab. Prereq: Mathematics 119 or consent of instructor.
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 waste pollution will be used to provide 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 environment 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. 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. 2 hours and 1 lab. Prereq: Physics 101 or 221.

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 capacity, field efficiency, cost analysis, and machinery replacement strategies. Functional analyses of tillage operations, planters and drills, no-tillage systems, hay harvest systems, forage and small grain harvesting, and cotton harvesting. Crop drying processes, off-road machinery safety considerations, and operator ergonomics. 2 hours and 1 lab. Prereq: Mathematics 123, 125 or consent of instructor.

434 Production Monitoring and Automation (3) Precision technologies for monitoring and control of agricultural systems. Applications include: yield monitoring; variable rate control and sensing systems for planters, sprayers, soil applied nutrients, water management, crop health, and pest pressure; electronic information transfer; and GPS-based vehicle guidance. 2 hours and 1 lab. Prereq: Mathematics 125 or 123 or equivalent.

452 Small Internal Combustion Engines (3) Theory, concepts and mechanics of small internal combustion engines; theoretical cycles, selection, operation, adjustment, troubleshooting and repair of single-cylinder engines. 2 hours and 1 lab. Prereq: Mathematics 123 or 125 or consent of instructor.

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. 2 hours and 1 lab. Prereq: Mathematics 123 or 125 or consent of instructor.

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. 2 hours and 1 lab. Prereq: Environmental and Soil Sciences 324, Statistics 201, Mathematics 152, or consent of instructor. Students cannot receive credit for both 474 and 574.

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.

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 Planning and 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 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 demand 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 I: 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 II: 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: 341.


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 international business. Topics announced prior to offering. Prereq: 361. May be repeated for additional credit provided topic is different. Maximum of 9 hours.

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, Finance 301, and consent of instructor.

491 Foreign Study (1-15) Prereq: Consent of instructor. May be repeated. Maximum 15 hours.

492 Off-Campus Study (1-15) Prereq: Consent of instructor. May be repeated. Maximum 15 hours. Satisfactory/No Credit grading only.

493 Independent Study (1-15) Prereq: Consent of instructor. May be repeated. Maximum 15 hours.
CHEMICAL ENGINEERING (226)


230 Introduction to Chemical Engineering Thermodynamics (3) Introduction to the laws of thermodynamics, state functions, and their conceptual basis. Ideal systems, the gas law, Raoult’s law, and deviations from ideal behavior (fugacity and activity). Introduction to chemical and phase equilibria. Prereq: Engineering Fundamentals 152, 105, Chemistry 130. Coreq: 200, 215, Mathematics 142.


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 Application of Statistical and Numerical Techniques in Engineering (3) Statistical methods for probabilities, expectations, sampling, and estimation; Numerical methods for regression, integration, solution of systems of linear/nonlinear algebraic and differential equations. Prereq: 215, Mathematics 142, or permission of instructor. (Same as Materials Science and Engineering 301.)

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, stripping, binary distillation, and extraction. Prereq: 200. Coreq: 230.

360 Process Dynamics and Control (3) Introduction to process modeling and industrial control system design. Mathematical tools for characterizing dynamic behavior of processes; theory and practice of operating and controlling such systems.

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 engineers. Prereq: Consent of instructor. May be repeated once. Satisfactory/No Credit grading only.

408 Honors Seminar (1) Presentations and discussions on topics of importance to chemical engineers. Prereq: Consent of instructor. May be repeated once. Satisfactory/No Credit grading only.

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.

411 Undergraduate Research Experience (3) Research problems in current topics in chemical engineering. Students work in teams to design, perform, and document current research projects. Prereq: 310.


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.

447 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: 340, consent of instructor.

450 Chemical Reactor Fundamentals (3) Homogeneous and heterogeneous reaction kinetics; idealized homogeneous reactor models, both for closed and flow systems; analysis of batch reactor data; multiple reactions; non-isothermal reactions. Prereq: 240, 340, 301.

467 Honors: Engineering Internship in Process Control (4) Selected students work in small groups on industrial problems in process dynamics and control. Directed by faculty and engineers from host company. Prereq: 360, consent of instructor.

477 Honors: Applied Process Automation Laboratory (3) Interfacing flexible batch continuous processes to automation systems. Top down analysis with bottom up implementation, hierarchical structures and object-oriented concepts are used to design automation solutions including human-machine-interfaces. Workstations with modern industrial equipment provide an interactive graphics and visualization environment. Prereq: 360 and consent of instructor.

478 Honors: Applied Process Automation Design Projects (3) Industrial programmable logic controllers (PLCs) and industrial automation and human-machine interface (HMI) design software are used on workstations to develop automation solutions by small teams of students. Advanced control strategies, networking and internet issues. Prereq: 477, consent of instructor.


481 Green Engineering (3) Principles and practical aspects of the design, commercialization, and use of processes and products for determining their feasibility and economic potential while minimizing the generation of pollution at the source and risk to human health and environment. Prereq: Consent of instructor.

483 Introduction to Reliability Engineering (3) (See Nuclear Engineering 483.)

484 Introduction to Maintainability Engineering (3) (See Nuclear Engineering 484.)

486 Chemical Process Safety (3) Introduction to chemical process safety, augmented with case studies. Topics include (1) Safety Strategies and Accident Prevention, (2) Toxic Substances in the Workplace and Industrial Hygiene, (3) Accidental Release of Hazardous Materials and Dispersion Modeling, (4) Fires and Explosions; Design for Prevention, (5) Design of Emergency Pressure Relief Systems, and (6) Identifying Potential Hazards. Prereq: 200, 230, and 240 or consent of instructor.

488 Honors: Design Internship in Green Engineering (3) Students work in small teams on applying green engineering principles to authentic industrial design problems. Directed by faculty and professionals from host industry. Prereq: 480.

490 Process Design and Economic Analysis (3) Students work in small teams on applying sound engineering principles to authentic industrial design problems. Directed by faculty and professionals from host industry. Prereq. 480.

494 Special Problems in Chemical Engineering (3) Chemical engineering problems related to recent developments in industrial practice or engineering research. Prereq: Consent of instructor. May be repeated. Maximum 6 hours.

498 Honors Thesis (3) Research in problems related to recent developments in chemical engineering. Prereq: Consent of instructor.
CHEMISTRY (235)

100 Principles of Chemistry (4) Bonding and molecular structure, gas laws, liquid and solid state, solutions, colloids, acids and bases, oxidation and reduction, kinetics and equilibria. 3 hours and 1 lab. (NS)

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. (NS)

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. 3 hours and 1 lab. Prereq for 130: 120 or 128. (NS)

128-138 Honors: General Chemistry (4,4) 3 hours and 1 lab. (NS)

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 course.

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 or prerequisite for 400. Prereq/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 138.

240 Chemical Programming (2) Use of the computer in solving problems encountered in chemistry. Required of and limited to chemistry majors. 1 hour and 1 lab. Prereq: 130 or 138.

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 a member of a theoretical or experimental team. Credits may not be applied toward a major or minor in chemistry. 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.


360 Organic Chemistry Laboratory (2) Experiments on topics discussed in 350-60. 1 hour lecture and 4-hour lab. Coreq: 360.

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). May be repeated. Maximum 6 hours.

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 a member of a theoretical or experimental team. Final comprehensive written report required. 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. Writing-emphasis course. Coreq: Senior standing in chemistry.

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. (OC)

408 Honors: Research in Chemistry (3) Advanced students work with faculty on research projects requiring knowledge and skills acquired in chemistry curriculum. An Honors Thesis 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. Prereq: Consent of instructor. Only 3 credits may be applied to a major or minor in Chemistry. May be repeated. Maximum 6 hours.

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 BS in Chemistry students or with consent of instructor.


471-481 Biophysical Chemistry (3,3) (See 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, Physics 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. 1 lab. Prereq/Coreq: Corresponding courses 471 or 473 and 481 or 483 for 489.

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/Coreq: 471 or 473.

CHILD AND FAMILY STUDIES (245)

101 Introduction to Child and Family Studies (2) Orientation to the Child and Family Studies Department, including requirements for the major, introduction to the faculty and their work, exposure to professional organizations, and learning about potential career possibilities. Includes observations.

105 Introduction to ECE: Seminar I (1) The initial seminar designed to introduce students to the field of early childhood education (ECE). Includes children’s development and behavior; integration of developmental characteristics into curriculum development; introductory experience with classroom observations; readings, observations, colloquy, and exposure to a broad spectrum of professionals in ECE.

106 Introduction to ECE: Seminar II (2) The second seminar designed to introduce students to the field of early childhood education (ECE). Includes history of ECE programs, practices, and policies; application of developmental theory to classroom methods; professional issues including ethics, career development, and building support networks; current ECE issues and research; impact of family, schools, and community on children’s learning; readings, observations, colloquy, and exposure to a broad spectrum of professionals in ECE. Prereq: 105.
210 Human Development (3) Conception through adulthood in various social/ecological contexts; interrelationships among various aspects of development: physical, cognitive, emotional, social; normative, nonnormative environments. (SS)


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.) (SS)

240 Human Sexuality (3) Sexuality through cultural, social, familial, and psychological factors.

312 Families in Middle and Later Adulthood (3) Adult life in society from youth through elderly; adjustment to internal, environmental changes through adulthood; interrelationships among various aspects of development: physical, cognitive, emotional, social. Includes observation.

320 Family Interaction (3) Dynamics of family interactions and influences of diversity, including parent-child relations, development of parenting skills, and intrafamily verbal and nonverbal communication processes, patterns, and problems. Prereq: 101, 210, 220.

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, interactions with children, child stress reduction and management in classroom. Laboratory participation included. Prereq: 106 and 211, 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, number, logic, media, physical knowledge; planning, implementing, evaluating curriculum activities. Laboratory participation included. Prereq: 350.

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.

385 Diversity Among Children and Families (3) Social class, race, ethnicity, culture, and religion are studied singly and in combination with gender and disabilities as shapers of the life chances and opportunities of individuals, children and families. Prereq: 220 or consent of instructor.

395 Introduction to Research Methods and Statistics (3) Basic research methods and statistics for child/human development, family studies, early childhood education, and related fields; sampling, measurement, design, data analysis; quantitative and qualitative methods; natural and contrived settings; principles for understanding research that impact children and families. Prereq: 101, 210, 220.

405 Development of Professional Skills (3) Development of interpersonal and other professional skills along with ethical guidelines needed for working with children, families, and other professionals from diverse backgrounds. Prereq: must be taken after other Child and Family Studies core courses and before the Child and Family Studies internship course (470, 480, or 490).


440 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. For Child and Family Studies majors only.

460 Directed Study in Child and Family Studies (1-3) Individual learning experience arranged for students under supervision of faculty. Prereq: 9 hours in Child and Family Studies and consent of instructor. May be repeated with different topics. Maximum 6 hours.

470 Practicum: Pre-K Teaching (6-12) Responsibility for planning and guiding groups of infants, toddler, or preschoolers under supervision of classroom teacher and coordinator. Includes weekly seminar. Fall and Spring student teaching begins on first day of registration and ends on last day of final examination period (student teaching follows the CDL 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 graduation. Priority for summer student teaching is given to students who have completed all program requirements, except student teaching, prior to the Summer session. Prereq: 350, 351, completion of all progression requirements for the practicum. Satisfactory/No Credit grading only.

471 Practicum: 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 Practicum: Community Placement (9-12) Supervised experiences with an area agency serving the needs of children and families. Summer practicum placement begins the Monday after spring commencement and concludes the last day of the summer session. Prereq: Completion of all progression requirements for the practicum. Satisfactory/No Credit grading only.

481 Research in Child and Family Studies (3-6) Prereq: 9 hours in Child and Family Studies, completion of 395, cumulative GPA of 3.0 or above, junior standing.

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.

490 Practicum: Research (3-12) Supervised research experience with emphasis on the identification and examination of key aspects of research methods: constructs, research questions and hypotheses, research design, measurement, and analysis. Prereq: Completion of all progression requirements for the practicum. May be repeated. Maximum 12 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: 15 hours in Child and Family Studies, overall GPA of 3.25 or greater, junior standing, or consent of instructor. May be repeated. Maximum 6 hours.

CHINESE (249)

131-132 Elementary Chinese I, II (5.5) (See Asian Languages 131-132.)

231-232 Intermediate Chinese I, II (5.5) (See Asian Languages 231-232.) (CC)

311-312 Chinese Literature in English Translation (3.3) (See Asian Languages 311-312.)

331-332 Advanced Chinese I, II (4.4) (See Asian Languages 331-332.)

431 Readings in Chinese Literature (3) (See Asian Languages 431.)

CINEMA STUDIES (251)

235 Introduction to Cinematography as Art (3) (See Art Media Arts 235.)

236 Introduction to Video Art (3) (See Art Media Arts 236.)

281 Introduction to Film Studies (3) (See English 281.)

312 Popular Culture and American Politics (3) (See American Studies 312; Political Science 312.)

315 Asian Film (3) (See Asian Languages 315.)

316 Luso-Brazilian Cinema and Literature (3) (See Portuguese 316.)
323 German Film (3) (See German 323.)
325 Russian Film (3) (See Russian 325.)
334 Film and American Culture (3) (See English 334.)
400 Special Topics (3) May be repeated. Maximum 6 hours.
420 French Cinema (3) (See French 420.)
421 Topics in Italian Literature and Cinema (3) (See Italian 421.)
433 History of Film and Modern Art (3) (See Art Media Arts 433.)
434 Hispanic Culture Through Film (3) (See Spanish 434.)
435 Cinematography as Art (3) (See Art Media Arts 435.)
436 Video Art (3) (See Art Media Arts 436.)
465 Latin American Film and Culture (3) (See Spanish 465.)
469 Sexuality and Cinema (3) (See Women's Studies 469.)
489 Special Topics in Film (3) (See English 489.)
491 Foreign Study (1-15)
492 Off-Campus Study (1-15)
493 Independent Study (1-15)

CIVIL ENGINEERING (254)

205 Professional Development I (2) Introduction to civil engineering specialties, history, and achievements. Professional responsibility, communication, and organizations. Prereq: Sophomore standing. (OC) (WC)
210 Geometrics (4) Introduction to the measurement, representation, analysis, management, retrieval and display of spatial data concerning both the earth's physical features and the built environment. Covers land and construction surveying, controls, error analysis, use of CADD and an introduction to global positioning systems (GPS) and geographical information systems (GIS) used in civil engineering. 3 hours, 1 lab. Prereq: Sophomore standing.
261 Structural Analysis I (3) Reactions; shear and moment diagrams; forces in trusses; uniaxial stress and strain; area moments of inertia; torsion. Prereq: Engineering Fundamentals 202.
305 Professional Development II (1) Legal and ethical responsibilities, continuous improvement, career planning, and leadership. Prereq: 205.
309 Applied Professional Responsibility (1) Introduction to the American Society of Civil Engineers (ASCE), the primary civil engineering professional society, and interaction with the local branch and state section of the ASCE. This class provides a framework for the participation in professional practice activities, service to the community, and educational outreach. These activities may be coordinated through the Student Chapter of ASCE, or through the department, the college or other approved groups. May include participation in the annual ASCE Regional Student Chapter Conference. May not be used as credit toward graduation. Prereq: Sophomore standing in engineering. May be repeated. Maximum 3 hours.
330 Introduction to Soil Behavior (4) Physical and mechanical properties of soils, theory of compaction, seepage, and effective stress. Consolidation theory, time rate and settlement, shear strength of sands and clays, and analysis of homogeneous slopes. 3 hours and 1 lab. Prereq: 205, Coreq: 361.
351 Transportation Engineering I (3) Transportation problems and perspectives, rural and urban; use of systematic planning processes; development of alternatives and the evaluation of civil engineering projects. Civil engineering decision making and applications of economic analysis. Design of transportation terminals, airports, parking, etc. Prereq: 210.
352 Transportation Engineering II (3) Introduction to design, construction, maintenance, and operation of various transportation modes, their guideways and terminals, primarily highways and railroads. Prereq: 351.
361 Structural Analysis II (3) Stress and strain in beams and columns; Mohr's circle; influence lines; deflections and beams and trusses; analysis of indeterminate structures; moment distribution. Prereq: 261.
380 Water and Waste Treatment (3) Principles of unit operations employed in physical, chemical, and biological treatment of water, wastewater, and solid wastes. Prereq: Junior standing, 390.
390 Hydraulics (4) 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 and 1 lab. Prereq: 205 or Biosystems Engineering 221; Engineering Fundamentals 152 or 158.
395 Hydrology (3) Concept of hydrologic cycle; weather patterns; precipitation measurement and distribution, abstractions, and runoff; storm hydrograph and peak flow analyses, including design floods; reservoir and channel routing; rainfall and streamflow frequency analyses; groundwater flow. Prereq: 390.
400 Senior Design Project (3) Open-ended, comprehensive project emphasizing team approach to design process. Includes problem formulation, site planning, project management, drawings and specifications, cost estimating, and various project components typical of those faced by practicing civil engineers. Must be taken during the term of graduation. Summer graduates must take during their last preceding 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. Must be taken during the last 15 hours of the curriculum. Letter grade only.
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.
416 Hydrologic and Water Quality Engineering (3) (See Biosystems Engineering 416.)
431 Geological Engineering (3) Influence of geologic 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 and 1 lab. Prereq: 330 or consent of instructor. (Same as Geology 431.)
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, Statistics 251.
442 Construction Methods and Equipment (3) Fundamental operations in construction and equipment selection and productivity; 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 process of planning, locating and design of highway facilities; covers both geometric and pavement design. Prereq: 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: 352.
453 Airport/Railroad Planning and Design (3) Airport master planning and railroad engineering. Runway configuration, airfield capacity, geometrics and terminal layout and design. Railroad capacity, geometrics and system layout and design. Prereq: 352.
462 Analysis of Framed Structures (3) Vertical and lateral force resisting systems; gravity loads due to dead, live, and snow loads; lateral loads due to earthquake and wind; use of 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 a 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) (See 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 Engineering (3) Application of hydrologic/hydraulic principles for development of water resource project design and management of water resources; assessment of environmental impacts to surface water and groundwater; regulatory framework for water supply and water quality. Prereq: 390, 395 or 416.

CLASSICS (257)

111-112 Beginning Latin (4,4) Must be taken in sequence. Not available to students eligible for Latin 150.

121-122 Beginning Greek (4,4) Must be taken in sequence.

150 Latin Transition (4) 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.

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. (CC)

211 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 BC. Readings include Hesiod and Aeschylus. Writing-emphasis course.

221 Classical Greek and Roman Mythology (3) Use of myth in literature, history, religion and philosophy of Greece and Rome from about 450 BC to about 350 AD. Two foci are the latter half of the fifth century BC and the last quarter of the first century BC. Includes oriental intrusions into Greece and Rome, including early Christianity. Readings include Sophocles, Euripides, Roman poetry, and modern scholarship. Writing-emphasis course. (AH)

232 Archaeology and Art of Ancient Greece and Rome (3) Survey from the earliest human presence in the Mediterranean to the end of the Roman Empire (c. 200,000 BC–AD 476). For prehistoric times emphasis on material remains and anthropological theory used to recreate the cultures of the Minoans, Mycenaeans, Dark Age Greeks, and Etruscans. For the historical Greek and Roman periods emphasis on developments in architecture, sculpture, vase painting, wall painting, mosaics, and minor arts. Relationship of art to society. Writing-emphasis course. (AH)

251 Intermediate Latin: Grammar Review and Readings (3) Prereq: 112 or 150 or placement through the Latin placement examination. (CC)

252 Intermediate Latin: Vergil’s Aeneid (3) Prereq: 251 or equivalent. (CC)

253 Greek and Roman Literature in English Translation (3) Major literature of ancient Greece from Homer to Tacitus. Writing-emphasis course. (AH)

261 Intermediate Greek: Grammar Review and Readings (3) Systematic review of Attic Greek and readings from selected authors. Prereq: 122. (CC)

264 Intermediate Readings in Greek (3) Content varies. Prereq: Classics 261. (CC)

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.

303 History of the Roman Republic (3) (See History 303.)

304 History of the Roman Empire (3) (See History 304.)

305 History of the Late Roman Empire (3) (See History 305.)

310 The Ancient World: Greece (3) Greek history from the end of the Dark Age to the beginning of the Punic Wars, with an emphasis on the 5th-4th centuries BCE. The evolution of the city-state; social tensions and the emergence of classical democracy; ideologies of militarism, empire, and civil strife; and the shifting hegemonies that led to the rise of Alexander the Great. Writing-emphasis course. (Same as History 310.)

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.

362 Roman Law (3) This course covers the historical development of Roman law in the Classical period (50 BC–AD 250) with particular attention to the analysis of case-law in the areas 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 BC. 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 AD with emphasis on Athens in the fifth century BC and Roman Italy in the first and second centuries AD. Writing-emphasis course. (Same as Women’s Studies 383.)

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. Prereq: 401-402 or consent of instructor. May be repeated. Maximum 9 hours.

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. Prereq: 351-352 or consent of instructor. May be repeated. Maximum 9 hours.

435 Medieval Latin (3) Selected readings from the Latin prose and poetry of medieval Europe. Prereq: Consent of instructor.

436 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 description 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. (Same as Anthropology 436.)

441 Special Topics in Classical Civilization (3) Topics in art, literature, religion, and society of Greece and Rome. May be repeated with consent of department. Maximum 9 hours.

442 Intensive Survey of the Archaeology of the Prehistoric Aegean (3) Survey of archaeology and art of the Aegean from the earliest humans to the rise of the Greek polis in the 8th century BC. Highlights include Early Cycladic art, Minoan and Mycenaean complex societies, Thera, cultural interconnections with Egypt and the Near East, and the Trojan War. Emphasis on anthropological and modern art historical approaches. Writing-emphasis course. (Same as Anthropology 442.)

443 Intensive Survey of the Archaeology of Greece (3) Survey of the archaeology and art of Greece and the Greek-speaking areas from the Orientalizing through Hellenistic periods (c. 700–30 BC). Developments in architecture, sculpture, and vase painting seen in the context of changes in society. Archaeological evidence for daily life, economy, and political institutions. Writing-emphasis course. (Same as Anthropology 443.)

444 Intensive Survey of the Archaeology of Etruria and Rome (3) Survey of the archaeology of Italy and the Roman World from prehistoric times to the fall of the Roman Empire (1000 BC–AD 476). Highlights are the rise and decline of Etruscan culture, the development of Roman architecture, art, and urban planning, art and architecture used for political propaganda, and Roman cosmopolitan culture during the Empire. Writing-emphasis course. (Same as Anthropology 444.)

491 Foreign Study (1-15)

492 Off-Campus Study (1-15)

493 Independent Study (1-15)
COLLEGE SCHOLARS 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.
491 College Honors: Foreign Study (1-15) Limited to College Scholar students.
492 College Honors: Off-Campus Study (1-15) Limited to College Scholar students.
493 College Honors: Independent Study (1-15) Limited to College Scholar students.
498 Honors: College Scholars Studies (2-12) Designed for College Scholars working on their senior thesis, project, or performance. May be repeated. Maximum 16 hours.

COMMUNICATION AND INFORMATION (248)
150 Communication in an Information Age (3) Overview of human, mass, and mediated communication. Introduction to finding, organizing, and evaluating information. Open to students interested in majoring or minoring in the College of Communication and Information.

COMMUNICATION STUDIES (250)
201 Introduction to Communication Studies (3) Fundamental theories and practices with particular reference to interpersonal, group, organizational, and public communication. Prereq: Communication and Information 150.
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. (OC)
220 Interpersonal Communication (3) Process by which thoughts, feelings, and actions affect and are affected by the face-to-face communication situation.
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. (OC)
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.
271-272 Intercollegiate Forensics (1,1) For students actively participating in intercollegiate debate. Consent of instructor required. May be repeated. Maximum 4 hours.
300 Nonverbal Communication (3) Exploration of nonverbal communication from human communication perspective; origins and research, usage 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.
330 Group Communication (3) Small group decision-making; evidence, argumentation, leadership, roles, and norms as they affect critical thinking in groups.
371-372 Intercollegiate Forensics (1,1) For students actively participating in intercollegiate debate. Consent of instructor required. May be repeated. Maximum 4 hours.
397 Honors Seminar (1) Required of students enrolled in the honors program; admission with consent of school.
400 Topics in Communication Studies (3) Topics, scope of subject matter, and prerequisites to be determined by department. May be repeated. Maximum 6 hours.
407 Honors Seminar (3) In-depth survey of communication research topics. Topics rotate among health, interpersonal, organizational and team, and public communication. Open only to students currently enrolled in the Honors program. May be repeated. Maximum 12 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.
425 Interpersonal Health Communication (3) Interpersonal communication in health care settings. Topics include provider-client interactions, social support groups, stigma and disease, and contemporary models explaining the use of health-related information.
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.
440 Organizational Communication (3) Organizational setting and the theory and practice of management communication. Study 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 Communication Studies 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. May be repeated. Maximum 6 hours. Satisfactory/No Credit grading only.
450 Propaganda (3) Study of political, commercial, and social propaganda in the United States, World War I to present. Writing-emphasis course.
455 Political Persuasion (3) Study of the communication processes utilized by political candidates, office holders, and social movement organizers.
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. Writing-emphasis course. (Same as Women’s Studies 466.)
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; 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. Writing-emphasis course. (Same as Women’s Studies 476.)
491 Foreign Study (1-6) Participation in school-sponsored study-abroad program. Application forms available in school office. Major credit limited to 3 hours. Prereq: junior/senior standing with at least a 2.75 GPA; consent of supervising faculty member and school prior to registration (see school for proposal deadlines). May be repeated. Maximum 6 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 school prior to registration (see school for proposal deadlines). May be repeated. Maximum 15 hours.
493 Independent Study (1-6) Selected readings/research in an area of communication studies to be determined by the student in consultation with supervising faculty member and, ordinarily, in an area of study not covered by school curriculum. Application forms available in school office. Major credit limited to 3 hours. Prereq: Junior/senior standing with at least a 3.0 GPA; consent of supervising faculty member and school prior to registration (see school for proposal deadlines). May be repeated. Maximum 6 hours.
497-498 Senior Honors Thesis (3,3) Required of students enrolled in the Honors program; admission with the consent of the school.
499 Proseminar in Communication Studies (3) Major theoretical perspectives in communication studies, their interrelationships and applications; consideration of the significance and ethical implications of communication studies in modern society. Prereq: Senior standing, completion of 201, 340, 350 and at least 12 additional hours of communication studies courses.
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) (See English 452.)
454 Twentieth-Century International Novel (3) (See 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 research projects within designated areas. Prereq: Junior or senior standing; prior consent of faculty member. May be repeated with consent. Maximum 9 hours. Satisfactory/No Credit grading only.

COMPUTER SCIENCE (266)

100 Introduction to Computers and Computing (3) Basic concepts of computer hardware and software. Microcomputer systems and workstations. Networking and the Internet. The interdisciplinary science of computing, 2-hour lab required. Does not satisfy any requirements for Computer Science major or minor. (QR)

102 Introduction to Computer Science (4) Problem solving and algorithm development. Organization and characteristics of modern digital computers with emphases 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. Prereq: 102.

140 Data Structures (4) Advanced problem solving and algorithm development, structured programming, data structures and applications, I/O techniques, lists, queues, trees, algorithms, files. 3-hour lab required. Prereq: 102.

160 Computer Organization (4) Number systems, Boolean algebra, combinational and sequential circuits, registers, processor functional units and control, pipelining, memory and caching, stored program computing, memory management, computer system organization, assembly language programming. 3-hour lab required. Prereq: 102.

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/at/ed/sed, awk, perl, python, make, rcs, jgraph, gcc/cpp/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. 3-hour lab required. Prereq: 140 and 160.


340 Foundations of Software Engineering (3) Principles of analysis and design of information systems. Principles of program design and verification, formal objects, formal specifications. 3-hour lab required. Prereq: 140, 160, 311.

350 Introduction to Technical Computing (3) For students in the sciences, engineering, or mathematics. Basic ideas of algorithm design and data structures using a high-level technical language in an interactive environment. Topics may include data analysis, plotting and visualization, and numerical computation. 2-hour lab required. Course does not fulfill any requirements for the computer science undergraduate major. Prereq: Mathematics 142.

360 Systems Programming (3) Introduction to user-level systems programming; file control, process control, memory management, system utilities, network programming. 3-hour lab required. Prereq: 302.

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 and progression into the computer science major.

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. 3 hour lab required. Prereq: 140, 160; Mathematics 241 and 251.


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. Prereq: Completion of core curriculum or consent of instructor. May be repeated. Maximum 9 hours.

430 Advanced Topics in Hardware Systems (3) Topics such as architecture, parallel processors, microprogramming, networks and communications. Emphasis on faculty research. Prereq: Completion of core curriculum or consent of instructor. May be repeated. Maximum 9 hours.

440 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. Prereq: Completion of core curriculum or consent of instructor. May be repeated. Maximum 9 hours.

460 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. Prereq: Completion of core curriculum or consent of instructor. May be repeated. Maximum 9 hours.

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. Prereq: Completion of core curriculum or consent of instructor. May be repeated. Maximum 9 hours.

471 Numerical Analysis (3) (See Mathematics 471.)
472 Numerical Algebra (3) (See 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. Prereq: Completion of core curriculum or consent of instructor. May be repeated. Maximum 9 hours.

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. Prereq: Consent of instructor. Maximum of 6 hours may be applied to the major. May be repeated. Maximum 9 hours.

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 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 reading and understanding of personal factors.

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.

406 Engineering Communication and Performance Field Work (3) Capstone experience for the engineering communication and performance minor. Includes instruction, field work, and supervision. Prereq: 306. Satisfactory/No Credit grading only.

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 Women's Studies 410.)

431 Personality and Mental Health (3) Perspectives of mental health with applications to education and other social institutions. (Same as Educational Psychology 431.)

480 Interviewing and Counseling Techniques (3) An introduction to basic helping skills necessary to the preparation of counselors, teachers, and others involved in human service delivery.

493 Independent Study (1-5) Independent investigation of problems in educational and counseling psychology. May be repeated. Maximum 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/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.

310 Ballet: Level II (2) Instruction and practice in intermediate classical ballet 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 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 (1-3) Independent study in a specialized area with dance. Prereq: Consent of instructor. May be repeated. Maximum 9 hours.

495 Dance Pedagogy (3) Principles and methods of the teaching of dance with practical application in a mini-teaching experience. Prereq: Upperclass or graduate standing and approval of instructor. Senior standing or graduate status required for graduate credit. Different level of performance is expected of those registered for graduate credit.

ECOLOGY AND EVOLUTIONARY BIOLOGY (278)

202-203 Ecology and Evolutionary Biology Colloquium (1,1) Weekly discussions of current topics in ecology, behavior, and evolutionary biology including undergraduate research and career opportunities, for declared and potential departmental majors. Course familiarizes students with the contemporary research and with its applications and introduces them to departmental faculty and resources. Prereq: Biology 101-102 or equivalent. Satisfactory/No Credit grading only.

240 Human Anatomy (4) Gross and Microanatomy of the human. Credit may not be applied toward Ecology and Evolutionary Biology major. 3 hours lecture, 3 hours lab. Prereq: Biology 101 or 102 or 130 or 140 or equivalent introductory biology course.

304 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. Occasional field trips. May not be applied to the ecology and evolutionary biology concentration.

305 Evolution and Society (3) Issues and controversies surrounding the teaching and learning of evolution in America today. Prereq: General Biology or Anthropology 110 or consent of instructor. May not be applied to ecology and evolutionary biology major. Writing-emphasis course. (Same as Anthropology 305.)

309 Biology of Human Affairs (3) Current topics in biology and their public relevance, especially the interaction between biology and government. Issues include conservation, health, agriculture, national parks, population, etc.

330 Field Botany (3) Principles of taxonomy, basic ecological concepts and identification, recognition, collection and preservation of local, native and naturalized plants. Prereq: 8 hours in biological sciences.

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. Maximum of 4 hours may be applied toward the biological sciences major. May be repeated. Maximum 8 hours.
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 applications, including societal and economic impacts and moral and ethical implications. An oral presentation and a referenced library-research essay are required. Writing-emphasis course.

410 Plant Evolutionary Morphology (4) Morphology, development, natural history, and evolution of fungi, cyanobacteria, non-vascular plants (algae and bryophytes), and vascular plants (ferns, fern allies, gymnosperms, and flowering plants). Prereq: Biology 102 or 111 or 130 or equivalent.

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. Maximum 4 hours may be applied toward the departmental major. May be repeated.

414 Plant Anatomy (3) Cells, tissues and organs, their development in vegetative and reproductive structures of vascular plants. Emphasis on seed plants. Prereq: Biology 111-112 or Biology 130-140 or equivalent.

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 pseudoscience, successful 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 Philosophy 419.)

421 Community Ecology (3) Interactions between individuals, species, communities and environments, including competition, coexistence, predation, herbivory; causes and consequences of biological diversity; biological invasions; application of advanced sampling and analysis techniques; local to global environmental change. Periodic field trips or laboratories. Prereq: Biology 250 or equivalent.

433 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.

446 Introduction to Oceanography (4) Basic oceanography, including physical, chemical, geological and biological processes and patterns. Emphasis on interrelated subsystems such as upwellings, polar oceans, hydrothermal vents, gyres, coral reefs, estuaries, and coastal regions. 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.)

460 Evolution (4) Principles, facts, and theories regarding biological evolution. Concepts, processes and product in development of organic diversity. Historical development of ideas concerning biological evolution. 3 hours lecture and 2 hours lab/discussion. Prereq: Biology 240 or consent of instructor.

461 Special Topics in Organismal Biology (3) Evolution, ecology, biogeography, classification, and anatomy of selected animal and plant taxa. Prereq: Biology 250 or consent of instructor. May be repeated if topic differs. Maximum 12 hours.

465 Evolutionary and Functional Vertebrate Morphology (4) A detailed study of the structure and function of the vertebrates. Analysis of evolutionary patterns of vertebrates using the comparative method and data from anatomy, developmental biology and functional morphology within a phylogenetic context. Laboratory requires intensive dissection to learn vertebrate anatomy, evolutionary trends and specializations. 2 hours and 2 labs. Prereq: Biology 250 or consent of instructor, Physics 221 recommended.

470 Aquatic Ecology (3) Introduction to the physio-chemical nature of inland waters with description of biotic communities and their interrelationships. 2 hours and 1 lab. Prereq: Chemistry 120-130 and Biology 250.

474 Ichthyology (4) Evolution, classification, collection and identification, distribution and biology of fishes with emphasis on freshwater fauna of Eastern North America. 2 hours and 2 labs. Prereq: Biology 250 or consent of instructor.

475 Field Ornithology (2) Intensive one week field course intended to introduce students to the behavior, ecology, and field identification of birds. Prereq: Biology 250 and consent of instructor.

484 Conservation Biology (3) Application of principles and techniques of ecological research to conservation of biological diversity at genetic, population, community, and ecosystem levels. Prereq: Biology 240, 250.

490 Undergraduate Seminar (1) Student oral presentations of topics related to developmental and working concepts of ecology and evolution. All majors are encouraged to enroll. Coreq: Upper-division standing in the biology major. May be repeated. Maximum 2 hours.

493 Independent Study (1-15) Independent study under the direction of a faculty member. Consent of instructor required. A maximum of 3 hours may be applied to major. May be repeated.

495 Evolutionary Ecology (3) Basic concepts in evolutionary and ecological genetics. Biogeography, climate, population genetics, evolution and natural selection, population growth and regulation, competition, niche, experimental ecology, predation, phylogenetics in ecology, biodiversity and conservation. Prereq: Biology 130 and 250. Students may not receive credit for both 495 and 595.

ECONOMICS (283)

201 Introductory Economics: 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. (SS)

207 Honors: Introductory Economics (4) Honors course for students of superior ability and interest. Students accepted on the basis of their records. (SS)

311 Intermediate Microeconomics (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 non-tariff trade distortions, protection arguments, regional integration. Prereq: 201. Students may not receive credit for both 321 and 329.

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. Writing-emphasis course. Prereq: 201 or permission of instructor.

329 International Economics for Business (3) For business majors in international business collateral or dual concentration only. Statement of international transactions, exchange rate determination, risk management strategies, currency crises, monetary arrangements, comparative advantage, tariff and non-tariff trade distortions, trade policies, protectionist arguments, regional integration. Prereq: Business Administration 361. Students may not receive credit for both Economics 321 and 329.

331 Government and Business (3) Antitrust and regulatory economics, problems in regulation and social control of business organization, oligopoly models. Prereq: 201.

341 Survey of Labor Economics (3) Extension 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.

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) Introductory probability, statistics, and econometrics from an economic perspective, with emphasis on skills related to gathering, managing, processing, presenting, and interpreting economic data. Includes the use of statistical software in hands-on research projects. Considers common econometric problems such as multicollinearity, heteroscedasticity, and autocorrelation. Prereq: 201, Statistics 201.

400 Special Topics (3) Topics vary. Prerequisites determined by department each time course is offered. Numerical grade is given to law students. Prereq: 201. May be repeated when topic varies. Maximum 9 hours.

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.


436 Economics of Health and Health Care (3) Medical care and health status; demand for medical care and insurance; physician and hospital supplies; government provision of services and insurance; regulation of health care markets. Writing-emphasis course.

462 Economics of Resources and Environmental Policy (3) Economic analysis of environmental policy and allocation of resources. Benefits and costs of development of natural resources and impacts of growth on environment. Writing-emphasis course. Prereq: 201.

471 Public Finance: Optimal Government Functions and Expenditure Analysis (3) Problems of collective consumption, external effects, public investment, social decision making. Writing-emphasis course. Prereq: 201.

472 Public Finance: Taxation and Intergovernmental Relations (3) Individual taxes and tax system, non-tax sources of revenue, fiscal federalism. Writing-emphasis course. Prereq: 201.

482 Introduction to Mathematics Economics (3) Application of basic mathematical tools (e.g., calculus, matrix algebra, etc.) to major topics of economic theory. Prereq: Economics 311 with a grade of B or better, Mathematics 141-142 or 147-148.

492 Economics Off-Campus Study (1-6) Prereq: Consent of instructor. Satisfactory/No Credit grading only. May be repeated. Maximum 6 hours.

493 Independent Study (1-3) Opportunity for qualified students to pursue topics of special interest. Prereq: Senior standing, 3.0 GPA in economics courses, and consent of instructor. May be repeated. Maximum 3 hours.

499 Analysis of Economic Problems (3) Study of the effects of economics on modern society and the practice of economics from a value-oriented perspective. Students will integrate learning from all fields of economics and other disciplines where appropriate, and work as teams to prepare economic analyses of selected economic problems facing modern society. Writing-emphasis course. Prereq: Senior standing and completion of 311, 313 and 6 other hours of upper-division economics courses.

EDUCATION (289)

100 Special Topics (1-3) Study in selected disciplinary or professional areas represented in the College of Education, Health, and Human Sciences. Topics to be determined as needs/issues are identified and as resources are available to support the course. May be repeated. Maximum 3 hours.

EDUCATION OF THE DEAF AND HARD OF HEARING (285)

410 Practicum with Deaf/Hard of Hearing (3) Supervised practicum with hearing impaired students in preschool, public school, and/or residential school setting.

415 Language Development of Deaf/Hard of Hearing I (3) Language problems of hearing impaired contrasted with scope and sequence of normal language development. Formal linguistic systems used to describe language development problems.


419 Speech Development of Deaf/Hard of Hearing (4) Theories of speech development, approaches in training perception and production of speech, and aural habilitation. Practicum experiences.

424 Nature of Hearing Impairments (3) Anatomy and physiology of hearing; nature and causes of hearing loss; methods and instrumentation for assessment of hearing level; interpretation of audiologic services to medical and other rehabilitative disciplines.

425 Introduction to the Psychology and Education of the Deaf/Hard of Hearing (3) Primarily for those planning to teach the hearing impaired. Research related to psychology, social adjustment, communication methodology, language development and education of the hearing impaired. Survey of literature. Visits to programs.

EDUCATIONAL INTERPRETING (287)

223 American Sign Language I (3) Expressive and receptive skill development in sign communication. Video text and interactive teaching method used. Class conducted totally in sign. This course is a prerequisite for 226.

226 American Sign Language II (3) Expressive and receptive skill development in sign communication. Video text and interactive teaching method used. Class conducted totally in sign. Must be taken in sequence. Prereq: 223.

335 Interpreting Techniques (3) Introduces students to linguistic techniques to enhance interpreting performance. Introduction of translation techniques that form the basis for interpreting. Students will practice intralingual technique designs to improve English and ASL skills.


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 expressive and receptive sign 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 supportive 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) (See 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 15 hours.

**ELECTRICAL AND COMPUTER ENGINEERING (319)**

206 Electrical Engineering Computations (4) Engineering problem solving and algorithm development by programming computers. Emphasis on software engineering, object-oriented design, building abstractions with procedures and data, and programming in a modern computer language. Includes Level 1 design projects which require laboratory work.

255 Introduction to Logic Design of Digital Systems (4) Standard codes, number systems, base conversions and computer arithmetic. Boolean algebra, minimization and synthesis techniques for combinational and sequential logic. Use of VHDL for logic synthesis. Implementation of circuits using SSI, MSI and LSI components. Includes Level 1 design projects which require laboratory work.

300 Circuits (5) Fundamental laws of circuit analysis. Ohm’s Law, Kirchhoff’s current and voltage laws, the law of conservation of energy, circuits containing independent and dependent voltage and current sources, resistance, conductance, capacitance and inductance analyzed using mesh and nodal analysis, superposition and source transformations, and Norton’s and Thevenin’s Theorems. Steady state analysis of DC and AC circuits. Complete solution for transient analysis for circuits with one and two storage elements. Complex frequency, sinusoidal forcing functions, and natural response. Resonance: general case, special cases in series and parallel circuits. Scaling: magnitude and frequency. Admittance, impedance and hybrid parameters. Includes Level 1 design projects which require laboratory work.

301 Circuits and Electro Mechanical Components (3) DC and AC circuits, transients, transformers, motors, generators. For non-majors only. Prereq: Mathematics 231, Physics 231.

302 Electronics and Computer Circuits (3) Analog circuits, operational amplifiers, digital systems and logic circuits, semiconductor devices. For non-majors only. Prereq: 301.

313 Probability and Random Variables (3) Axioms of probability, set theory, independence, conditional probability, Bayes’ Theorem, permutations and combinations, histograms, probability density, moments, functions of a random variable, joint probability density, central limit theorem, samples and populations, sample mean and variance, curve fitting, correlation of time signals. Prereq: Mathematics 231.


316 Signals and Systems II (3) Sampling theory, theory and application of Laplace transforms, feedback, root locus, gain and phase margin, theory and application of z Transforms, digital filters, discrete-time state variables. Prereq: 315.


335 Electronic Devices (4) Semiconductor physics, theory of p-n junctions; diodes, field-effect transistors, and bipolar transistors; modeling of diode and transistor devices; analysis and design of bipolar and rectifier circuits; basic transistor switching circuits and single stage amplifiers; electronic circuit simulation using SPICE. Includes 1 credit laboratory work involving Level 1 design projects. Prereq: 300.

336 Electronic Circuits (3) Multistage transistor amplifier biasing; gain stages, and output stages; frequency and transient response of open loop linear amplifiers; fundamentals of integrated circuits, operational amplifier applications in basic feedback configurations; basic transistor switching circuits. Includes laboratory experiments and design projects. Prereq: 335. Coreq: 315.

341 Fields (3) Coulomb’s law, Gauss’ law, Maxwell’s equations for electrostatic and magnetostatic cases; Maxwell’s equations for dynamic case, dynamic potentials, uniform plane wave propagation. Transmission lines. Prereq: 300, Mathematics 241, Physics 232.

342 Analog Communication Amplitude and Frequency Modulation (3) Probability and random variables, signal-to-noise ratio, propagation models, link budget analysis, bandpass signals, amplitude modulation, frequency modulation, spread-spectrum. Includes Level 1 design projects which require laboratory experiments. Prereq: 315.

355 Computing System Fundamentals (3) Introduction to machine-level computer organization and programming. Basic microprocessor architectures; memory architectures; structured assembly language programming; intra- and inter-computer communication; I/O systems; device drivers; multi- and distributed processor systems; issues in computer security. Includes Level 1 design projects which require laboratory work. Prereq: 206, 255.

395 Junior Seminar (1) Presentations and discussions related to professional development, including registration, ethics and current topics in electrical engineering. Prereq: 300. Satisfactory/No Credit grading only.

400 Senior Design (5) A major design project that focuses the student’s attention on professional practice, accumulated background of curricular components, and recent developments in the field. This major design emphasis is directed to topics within the field of electrical engineering. Includes Level 3 design projects which require laboratory work. Prereq: 316, 335, 342, 355. (OC/UC)


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.


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; reference 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, multiplier and function generators, rectifiers, references, active filters, modulation and demodulation, sinusoidal generators. Noise fundamentals and calculations 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 (3) Feedback amplifier principles; wideband linear amplifier design; low-noise preamplifier design; audio power amplifier design. 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 Mary signaling, spectra of line codes, link budget 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.

442 Communication System Design (3) Application of communication theory to system design. Hardware and software design and simulation. Modern communication topics. Includes Level 1 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 certain 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: 355.

453 Introduction to Computer Networks (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. Prereq: 206.

455 Embedded Systems Design (3) Design and development of embedded systems for data acquisition and special-purpose computing systems, such as peripheral interfacing, serial/parallel communications and bus systems. Assembly language programming, software architecture, and machine architecture of microcontrollers. Includes Level 1 design projects which require laboratory work. Prereq: 355.

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 processing, remote sensing, data mining and bioinformatics. Includes Level 1 design projects. Prereq: 316. 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 controller. Includes Level 1 design projects and laboratory work. Prereq: 316, 325, 336.

482 Power Electronic Circuits (3) Voltage-fed inverters, PWM principles, control of inverters, dc-de converters, dc machine drives, resonance converters, step motor drives, brushless dc machine principles. Includes Level 1 design projects. 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. Prereq: Completion of all junior electrical engineering courses or consent of instructor. May not be repeated.

**ELECTRONIC MEDIA**

See Journalism and Electronic Media.

**ELEMENTARY EDUCATION (322)**

325 Teaching Science and Social Studies in Elementary and Middle Schools (3) Methods and materials for teaching science and social studies in elementary and middle schools. Teaching approaches common to both fields including inquiry, multisensory activities and group approaches. For Bachelor of Science in Education students only. Prereq: Admission to Teacher Education Program.

326 Teaching Language Arts/Reading in Elementary and Middle Schools (3) Language and language development as applied to teaching of oracy (listening-speaking) and certain aspects of literacy (reading process/reading and writing). Includes methods and materials. For Bachelor of Science in Education students only. Prereq: Admission to Teacher Education Program.

351 Laboratory and Field Studies in Elementary Education (1-2) Simulated and actual experiences in which students apply concepts and skills from professional methods courses in a variety of school settings and levels. Prereq: Admission to Teacher Education Program. Coreq: 422. May be repeated. Maximum 3 hours. Satisfactory/No Credit grading only.

356 Elementary and Middle School Teaching Laboratory Experience (1) Simulation and micro-teaching experiences to develop planning skills and give feedback to students relative to their ability to apply learning to school settings. Prereq: Admission to Teacher Education Program. Coreq: 422.

421 Elementary and Middle School Science and Social Studies Instruction (3) Methods and materials for teaching science and social studies. Development of functional relationships and individual entities of the two fields. Not open to students with recent course or background in the teaching of elementary school science and/or social studies. Prereq: Admission to Teacher Education Program.

422 Elementary and Middle School Teaching Methods I (6) Methods and materials for teaching elementary and middle school reading, language arts, science, social studies and mathematics. Emphasis on planning, implementation and evaluation of integrative learning experiences. Prereq: Admission to Teacher Education Program; must be taken prior to Professional Year Internship.

424 Studies in Elementary Education (1-3) Variable topics on teaching in Early Elementary (K-3), Middle Elementary (4-8), and Skills (K-8). Prereq: Admission to Teacher Education Program and permission of instructor. May be repeated. Maximum 8 hours.

429 Language Arts/Reading Instruction in Elementary and Middle Schools (3) Language and language development as applied to teaching of oracy (listening-speaking) and aspects of literacy (reading process/reading and writing). Not open to students who have had recent course in language arts methods. Prereq: Admission to Teacher Education Program.

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.

**ENGINEERING FUNDAMENTALS (323)**

100 Engineering Skills Development (1-3) Exercises in the skills and tools essential to the practice of engineering. Credit cannot be used toward any engineering degree. May be repeated. Satisfactory/No Credit grading only.

105 Computer Methods in Engineering Problem Solving (1) Introduction to computer applications used in engineering problem solving and communications. Introduction to programming concepts including conditional statements and loops; the development and implementation of logic flow diagrams. Coreq: 151 or 157.
ENGLISH (339)
Completion of the English composition requirement is prerequisite to all other English courses.

101 English Composition I (3) Strategies for written argumentation, critical reading, and discussion; emphasis on audience analysis, the invention and arrangement of ideas, and revision for style and mechanics; typical assignments include formal essays, in-class essay exams, journals, quizzes and collaborative projects; two individual conferences required. Students wishing additional help with writing should also register for English 103. A, B, C, No Credit grading. (WC)

102 English Composition II (3) Critical strategies for reading and writing about literature; emphasis on the documented essay, library skills, and continued development of style and voice; typical assignments include analytical essays, annotated bibliographies, journals, quizzes, and collaborative projects; two individual conferences required. Students wishing additional help with writing should also register for English 104. Prereq: 101. A, B, C, No Credit grading. (WC)

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. 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. (University Honors students receiving a grade of A or B may complete their freshman English requirements by choosing one of the University Honors Interdisciplinary Seminars: University Honors 257, 267, or 277. These seminars are limited to University Honors students only.) 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 do not pass the English Placement Examination. Prereq: 101. 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. (AH)

202 British Literature II: Wordsworth to the Present (3) Major literary works from three periods: Romantic, Victorian, and the Twentieth Century. Writing-emphasis course. (AH)

207 Honors: British Literature I (3) Enriched section of 201 designed for students with a 3.25 or higher GPA. (AH)

208 Honors: British Literature II (3) Enriched section of 202 designed for students with a 3.25 or higher GPA. (AH)

221 Literature of the Western World I: Ancient, Medieval, and Renaissance (3) Writing-emphasis course. (AH)

222 Literature of the Western World II: Enlightenment, Romantic, and Modern (3) Writing-emphasis course. (AH)

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. (AH)

232 American Literature II: Civil War to the Present (3) Development of American literature from Civil War to the present. Writing-emphasis course. (AH)

233 Major Black Writers (3) Black American literature as a literary tradition. Writing-emphasis course. (Same as African and African-American Studies 233.) (AH)

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. (AH)

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. (AH)

251 Introduction to Poetry (3) Poetry as a distinct mode of artistic expression. Critical tools for perceptive reading of poems. Writing-emphasis course. (AH)

252 Introduction to Drama (3) Critical tools for perceptive reading of plays. Writing-emphasis course. (AH)
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. (AH)

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. (AH) (WC)

255 Public Writing (3) Rhetorical strategies for effective communication about public issues. Students will learn to write for multiple audiences and may be asked to participate in collaborative writing projects with business, academic, or political organizations. (WC)

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. (WC)

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.

321 Introduction to Old English (3) Language and literature of England from c. 700 to c. 1100. Reading of prose works and shorter poetry in Old English. Cultural context of Anglo-Saxon England explored through critical essays, histories, and primary texts in translation. Focus on manuscript evidence and medieval and modern textual practices. Writing-emphasis course. (Same as Linguistics 321.)

331 Race and Ethnicity in American Literature (3) Examines the role of ethnic and racial identity in the literature of the United States. Writing-emphasis course. (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. Writing-emphasis course. (Same as Women’s Studies 332.)

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.” Writing-emphasis course. (Same as African and African-American Studies 333.)

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 20th century. Writing-emphasis course. (Same as American Studies 334; Cinema Studies 334.)

351 The Short Story (3) American, British, and international. Content varies.

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. (WC)

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. (WC)

363 Writing Poetry (3) Introduction to writing poetry. (WC)

364 Writing Fiction (3) Introduction to writing novels and short stories. (WC)

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: folklore, folksong, 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, folklore, 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. (WC)

401 Medieval Literature (3) Reading and analysis of selected medieval literary masterpieces in modern English. Writing-emphasis course. (Same as Medieval Studies 405.)

402 Chaucer (3) Reading and analysis of the Canterbury Tales and Troylus and Criseyde in Middle English. (Same as Medieval Studies 406.)

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., 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, Mote, 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 18th-Century: Dryden to Pope (3) Survey of English literature and culture from 1660 to 1745.

412 Literature of the Later 18th-Century: Johnson to Burns (3) Survey of English literature and culture from 1745 to 1800.

413 Restoration and 18th-Century Genres and Modes (3) Study of one major genre or literary mode such as drama, novel, poetry, nonfiction, prose, satire, romance, or epic written between 1660 and 1800. May be repeated.

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 19th-Century British Novel (3) Major novelists from Scott to Hardy.

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 ca. 1830 to the end of the Civil War. Includes writers such as Cooper, Poe, Hawthorne, Melville, Emerson, Thoreau, Stowe, Douglass, Whitman, Dickinson.

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, 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, Welty.

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) Content varies according to particular genres, authors, or theories 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 20th-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. (W/G)

456 Contemporary/Postmodern Literature (3) Studies in literature written after World War II. Content will vary. May be repeated once with permission of instructor. Maximum 6 hours.

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 fiction writing course. Prereq: 364 or consent of instructor.

466 Writing, Layout, and Production of Technical Documents (3) Principles of design for desktop publishing. Production of various documents to be incorporated into a professional portfolio. Prereq: 360 or consent of instructor.

470 Special Topics in Rhetoric (3) Topics vary. Prereq: 355 or consent of instructor. May be repeated with consent of department. Maximum 6 hours.

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.)

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.)

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; sociocultural 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. Particular 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; Linguistics 490.)

491 Foreign Study: Drama in Stratford and London (3-4) Seeing, studying, and writing about drama as performed in London and Stratford-upon-Avon during the summer.

492 Off-Campus Study: Drama in New York (3) Seeing, 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. Maximum 6 hours.

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 issue identification and argument. Critical reading and discussion of both professional and student writing. Introductory legal research techniques. No prior legal knowledge necessary. Prereq: 355 or consent of instructor. (Same as Legal Studies 496.)

498 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 professorial staff. Prereq: 398.
499 Senior Seminar (3) Intensive study in an author, period, genre, or of problems in language, literary history, or theory. Content varies, but all sections address problems of value from an interdisciplinary perspective. Substantial research paper required. Restricted to majors who have completed 15 upper-division hours in English. Writing-emphasis course, Capstone experience. (WC)

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 aspects of these organisms will also be explored. (NS)
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. 2 hours and 1 lab. Prereq: 6 hours of biological science. (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. 2 hours and 1 lab. Prereq: 6 hours of Biological Science.
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. 2 hours and 1 lab. Prereq: Biology 122 or equivalent.
405 Mycology (3) Survey of the fungal kingdom and traditional allies in the context of phyla and classes. Systematics, biology, reproduction, structure-function, physiology, and ecology are illustrated with materials and cultural techniques in laboratories. 2 hours lecture and one 2-hour lab. Students cannot receive credit for both 405 and 505. Prereq: Biology 111-112 or 130-140.
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.
411 Forest Insects and Diseases (3) Insects and pathogens associated with trees and shrubs will be identified and their impacts on host plants evaluated. Prereq: Biology 130, 140, or equivalent. Recommended: 313 or 321.
448 Taxonomy of Adult Insects (3) Classification, phylogeny, and distribution of insects and related arthropods. Lectures on theory and practice of systematics and major features of insect structure and evolution. Laboratory practice on methods of collection, preservation, and study of insects, with emphasis on order and family identification of adults. Insect collection and one or more field trips required. Undergraduates only. Prereq: 321, 325, or consent of instructor. Students receiving credit for 448 cannot receive credit for 548.
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; Plant Sciences 330. (Same as Plant Sciences 451.)
493 Independent Study in Entomology or Plant Pathology (1-4) Laboratory, field, or library research in entomology, plant pathology, or integrated pest management under the guidance of a faculty member. Prereq: Consent of instructor. May be repeated. Maximum 6 hours.

ENVIRONMENTAL AND SOIL SCIENCES (345)
120 Soils and Civilizations (3) Investigation of the close linkage between soil conservation and degradation and the consequences to ancient civilizations and environmental degradation and its societal impacts during modern times. Comparison of past soil management practices to present-day issues of soil salinization, erosion, and siltation. Introduction to the role of soil resources in current global environmental issues and conflicts. (CC)
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. 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. 1 hour and 1 lab. Prereq: Consent of instructor. May be repeated. Maximum 4 hours.
301 Professional Development (1) Techniques of effective professional communications; professional ethics; interviewing and the job search. Prereq: Junior standing. (OC)
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. 2 hours lecture and one 2-hour lab. Prereq: 210.
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. Nutrient management as it relates to agricultural sustainability and soil quality. 2 hours and 1 lab. Prereq: 210.
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, Microbiology 210.
343 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: clay mineralogy; soil organic matter; mineral weathering and 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, classification. 3 weekend field trips, 2 hours and 1 lab. Prereq: 210.
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, Physics 221 or equivalent.
462 Environmental Climatology (3) Study of atmosphere as environment. Physical, chemical and biological factors affecting climates of various earth 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. Prereq: Junior standing. May be repeated. Maximum 6 hours. Satisfactory/No Credit grading only.
493 Problems in Environmental and Soil Sciences (1-3) Special research problems in environmental sciences. Prereq: Approval of department and junior standing. May be repeated. Maximum 6 hours.
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. Prereq: 100. Satisfactory/No Credit grading only.
325 Athletic Training Techniques (3) Prevention of athletic injuries through sound conditioning programs and practices; recognition and immediate treatment of injuries. Prereq: 332, 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 Physical Activity Epidemiology (3) Epidemiological examination of the relationship of physical activity with the morbidity and mortality of chronic disease and related risk factors.
380 Special Topics (1-3) Study in selected disciplinary or professional areas of Exercise Science. Prereq: Progression to the major. May be repeated. Maximum 6 hours.
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: 332 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.
422 Biomechanics of Human Movement (3) Study of biomechanics and its application to the analysis of human movement. Emphasis on quantitative and qualitative analysis of human movement. Prereq: 332, Physics 221. Exercise science majors minimum cumulative 2.5 GPA.
426 Exercise Science Practicum II (1-6) Supervised experience in exercise/fitness areas. Prereq: Progression to the major and consent of instructor. Satisfactory/No Credit grading only. May be repeated. Maximum 10 hours.
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 adaptation to environment. 2 lectures and 1 lab. Prereq: Biochemistry and Cellular and Molecular Biology 230 or 440, exercise science majors, minimum cumulative 2.5 GPA. (Same as Biochemistry and Cellular and Molecular Biology 480.)
490 Exercise Physiology/Fitness Internship (12-15) Full-time practicum in exercise/fitness at approved agency. Prereq: 414, 422, 426, 480, progression to major, and consent of instructor. Satisfactory/No Credit grading only.
493 Directed Independent Studies (1-3) Independent study in a specialized area with exercise science. Prereq: Consent of advisor, progression to the major. May be repeated. Maximum 9 hours.
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)
402 Special Topics in Finance (3) Junior and senior level finance seminar. Topics to be announced prior to offering. Prereq: Finance 301.
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) Examine 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 the basic principles of risk management and insurance; and 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. (Same as Urban Studies 485.)
492 Off-Campus Study (1-3) Professional internship with practicing professionals under the direction of a faculty member. Available for free elective only. Prereq: Approval of instructor. May be repeated. Maximum 3 hours. Satisfactory/No Credit grading only.
493 Independent Study (1-3) Prereq: Consent of instructor and department head. May be repeated. Maximum 3 hours. Letter grade only.
495 Investment Fund Management (1-3) Members of this class (or investment team) manage over a half-million dollar portfolio of common stocks on behalf of the Tennessee Valley Authority (TVA). This team also engages in a 25 university investment performance competition sponsored by TVA. Prereq: Minimum GPA of 3.0 in all upper-division business courses attempted and consent of instructor. May be repeated. Maximum 3 hours.

FIRST YEAR STUDIES (355)
101 First Year Studies (1) 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 once a week. A, B, C, No Credit grading.
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. May be repeated. Maximum 3 hours. Satisfactory/No Credit grading only.

FOOD SCIENCE AND TECHNOLOGY (390)
140 The Food Industry (3) Introduction to the food industry and the production of an adequate, safe food supply for national and international markets.
240 Field Observations in Food Processing (2) Introduction to, observation of and familiarization with processing, packaging, quality control and distribution of different types of foods. 1 hour and 1 lab. Prereq: 140; non-majors must obtain permission of instructor.
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.
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. 2 hours lecture and 1 lab. Prereq: 140 and 240 or consent of instructor.
401 Professional Food Science Communication (1) Individual reports and group discussion on current topics. Prereq: Senior standing or consent of instructor. May be repeated. Maximum 3 hours.
410 Food Chemistry (4) Reactions of water, proteins, lipids, carbohydrates, minerals, enzymes, vitamins, and additives in foods. 3 hours lecture and 1 lab. Prereq: Chemistry 110 or equivalent. Coreq: Biochemistry 310.

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. 2 hours and 1 lab. Prereq: Basic statistics.

442 Special Topics In Food Science and Technology (1-3) Topics of current concern to the food industry. Prereq: Consent of instructor. May be repeated. Maximum 9 hours.

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. 3 hours lecture and 1 lab. Prereq: 340 and 410 or consent of instructor.

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. 1 lab. Coreq: 460.

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. Prereq: Consent of instructor. May be repeated. Maximum 12 hours.

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, 340 or consent of instructor.

FOREIGN LANGUAGE/ESL EDUCATION (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. Required for certification in modern foreign languages and Latin. Prereq: Completion or near completion of foreign language hours for certification and admission to Teacher Education Program.

FORESTRY (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.

214 Tree Biology (3) An introduction to the anatomy and development of woody plants, their reproduction, growth requirements, and functioning. Prereq: Biology 101-102 or 111-112.

215 Forest Ecology (3) Ecological interactions among tree species, other plant and animal species, and their environment. Forest ecosystem classification; energy, nutrient, and hydrologic cycles; site quality. Perturbations and growth, survival and forest composition; forest succession; fire ecology. Regeneration ecology through establishment and stand dynamics. Physiological ecology, ecological strategies, and adaptations of trees. 2 hours and 1 lab. Prereq: Forestry, Wildlife and Fisheries 212.


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. 2 hours and 1 lab. Prereq: Forestry Biological and Fisheries 212 or consent of instructor.

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, Communication Studies 210 or 240 or consent of instructor. (WC)


323 People and Forest Practices (1) Examination of how people, institutions and society at large affect and are affected by forest management practices. Case studies and field applications will concentrate 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, 323, 326, 329, 330. Letter grade only.


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: Biology 111 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; student use of reference collection of wood samples; day field trip may be required. Prereq: Forestry, Wildlife and Fisheries 212 or consent of instructor. Coreq: 331 for forestry majors.

414 Tree Physiology (3) Tree structure, growth and development, and function, and how these are related to the environment and to cultural practices. Influence of environmental variables on plant growth and distribution; effects of forest management practices on growth and function. Prereq: Biology 101-102 or 111-112. Students cannot receive credit for both 414 and 514.

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 3 hours.

420 Forest Resource Management (3) 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 and regulation; theory of 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. 2 hours and 1 lab. Prereq: 321 and Junior standing in wildland recreation concentration, or consent of instructor.
Northern Europe, Latin America, Indonesia, and Africa.

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. 1-hour lecture and 2-hour lab. Prereq: 331 and 332, 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.

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. Daily log, supervisor evaluations, and final report required. 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 maximum. Prereq: Junior standing, consent of instructor. May be repeated. Maximum 6 hours.

FORESTRY, WILDLIFE AND FISHERIES (398)

211 Introduction to Forestry, Wildlife and Fisheries (3) History of natural resources policies 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.

212 Dendrology and Silvics of North American Trees (3) Identification, classification, and nomenclature of important North American trees and woody shrubs; forest associations; silvicultural characteristics of trees and stands as the basis for the practice of silviculture. Daylong field trips may be required. 2 hours and 1 lab. Prereq: Biology 101-102, 111-112, or 130-140.

250 Conservation (3) Use and abuse of wildland resources. Historical perspectives and current management of forests, wildlife, and fish of North America including aspects of outdoor recreation and pollution problems. (NS)

312 Principles of Silviculture (3) Principles for treating forest stands to achieve selected objectives. 2 hours and 1 lab. Prereq: Chemistry 100. Coreq: ESS 210, Forestry 212, and (for forestry majors) 313. (WC)

313 Measurements and Sampling (2) Measurement techniques and sampling methods for vegetation; estimation of animal populations; map and aerial photo use. 1 hour and 1 lab. Prereq: Statistics 201, Agriculture and Natural Resources 290, Mathematics 125. Coreq: Forestry, Wildlife and Fisheries 312.

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 and Natural Resources 290, Mathematics 125, Chemistry 100, Biology 250.

410 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. 2 hours and 1 lab. Prereq: 317 or consent of instructor.

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. 2 hours and 1 lab. Prereq: 317 or consent of instructor.

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. 1 hour and 2 labs. Prereq: Senior standing.

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 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. (CC)

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 100 given to students receiving a grade of A in 218. (CC)

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 acquisition, 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: 212, 218, 300 or permission of instructor.

334 Intermediate Conversation (3) Emphasizes speaking skills. Further review of French grammar. Required of all majors. Prereq: 333 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. Writing-emphasis course. Prereq: a 300-level literature 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: 300-level literature course. Writing-emphasis course.


413 French Literature of the 18th Century (3) Major works of the Enlightenment. Writing-emphasis course. Prereq: 300-level literature course.

COURSES OF INSTRUCTION

250


420 French Cinema (3) The French cinema from its earliest days through the New Wave directors. Prereq: 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 offered to students majoring in a Romance language. Prereq: French 333 or 334 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. Writing-emphasis course. Prereq: French 333 or 334 or 345.

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 334 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. Linguistics 200 is strongly recommended. Writing-emphasis course. (Same as German 425; Linguistics 425; Russian 425; Spanish 425.)

426 Methods of Historical Linguistics (3) (See German 426.)

429 Romance Linguistics (3) Development of Classical Latin through Vulgar Latin into major Romance Languages. Writing-emphasis course. (Same as Linguistics 429; Spanish 429.)

430 Theatrical French (4) Comprehensive introduction to dramatic texts, performance, and theatrical production in French. Students collaborate in the creative staging of a French play and they actively participate in its public performance. Writing-emphasis course. Prereq: 351 or 352. May apply toward major as a literature course.

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. Writing-emphasis course. Prereq: a 300-level literature 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. Writing-emphasis course. Prereq: 300-level literature 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. Writing-emphasis course. Prereq: 400-level literature 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) May be repeated if content varies. 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)

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. (SS)

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. (NS)

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.

310 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.

320 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.

334 Meteorology (3) Dynamic atmosphere and resulting weather events. Nature of individual weather elements, their measurement and analysis over time and space.


345 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. Writing-emphasis course. Prereq: 101-102 or consent of instructor.


361 Regional Geography of the United States and Canada (3) Physical, economic, and social distributions as they relate to and give distinctive character to regions of the United States and Canada. Writing-emphasis course.

363 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.

365 Geography of Appalachia (3) Interrelation of physical, economic, and social patterns that give distinctive character to the region and its parts, especially in southern Appalachia. Appalachia in perspective in the current American scene. Writing-emphasis course.

366 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.

371 Geography of Europe (3) Physical, cultural, and economic characteristics of Europe. Emphasis on the geographical dimensions of change in contemporary Europe. Writing-emphasis course.

373 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.)

379 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.)

410 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 date, including coordinate systems, datum issues, scanning digitizing, map standards, and uncertainty in Geographic Information Systems. 2 hours lecture and 2 hours lab per week.
411 Introduction to Geographic Information Science (3) Concepts and methods of spatial analysis and their application using geographic information systems software and techniques. Emphasizes both theoretical and applied aspects of GIS. 2 hours lecture and 2 hours lab. Prereq: 310 or consent of instructor.

412 Advanced Cartography Techniques (3) Cartographic design and data display techniques for reference and thematic maps. Basic principles and methods of map reproduction. 2 hours lecture and 2 hours lab per week. Prereq: 310 or consent of instructor.

413 Remote Sensing: Types and Applications (4) Principles and uses of remote sensing imagery, digital data, and spectral data, with particular emphasis on geographic interpretation and mapping techniques. 3 hours lecture and 2 hours lab per week. Prereq: 310 or consent of instructor.

414 Spatial Databases and Data Management (3) Types, sources, acquisition, and documentation of spatial data. Spatial database management methods and strategies for data sharing. 2 hours lecture and 2 hours lab. Prereq: Geography 411 or consent of instructor.

415 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.

419 Practicum in Cartography/Remote Sensing (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.

421 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.

423 Geography of American Popular Culture (3) Geographical study of regional variation in popular cultures, especially focused on youth cultures in the United States. Writing-emphasis course. (Same as American Studies 423.)

429 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.

433 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.

434 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.

436 Water Resources (3) Global water resources and hydrologic processes, including water availability, flooding, and water quality issues examined from physical and economic geographic perspectives. Prereq: 131-132 or consent of instructor.

439 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 coursework in botany or consent of instructor.

441 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.)

442 Urban Social Geography (3) Geographical study of urban culture, social production of neighborhoods, social and behavioral aspects of territoriality, residential mobility, segregation, and the rise of post-industrial and global cities. (Same as Urban Studies 442.)

443 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.

449 Geography of Transportation (3) Examination of transportation systems, emphasizing their effects on trade patterns, land use, location problems, and development.

450 Process Geomorphology (3) (See Geology 450.)

454 Terrain Analysis (3) Analysis of landscape history from digital elevation datasets and traditional topographic maps. Basement materials and structures; and erosional and depositional evidence, including fluvial, glacial, aeolian, and shoreline features, of past climatic and biological regimes. Prereq: 131-132 or Geology 101-102 or Geology 107-108.

466 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 Geography Standards.

490 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.

491 Foreign Study (1-15) Prereq: Written consent of department required prior to registration.

492 Off-Campus Study (1-15) Prereq: Written consent of department required prior to registration.

493 Independent Study (1-15) Prereq: Written consent of department required prior to registration.

494 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.

495 Special Topics in Geography (1-4) Topics vary. Prereq: Consent of instructor. May be repeated with consent of instructor. Maximum 8 hours.

497 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.


499 Proseminar in Geography (3) Major themes in geography, especially trends over the past 40 years. Required for majors. Not open to graduate students. Writing-emphasis course. Prereq: Senior standing and completion of at least 12 hours of major or minor requirements in geography.

GEOLOGY (424)

101 The Dynamic Earth (4) Physical processes within and upon the Earth’s surface, including the formation of rocks, plate tectonics, and landscapes. 3 hours lecture and one 2-hour lab or field period. (NS)

102 Earth, Life, and Time (4) Fossils, evolution and ancient environments, plus a review of 4.5 billion years of earth history. 3 lecture hours and one 2-hour lab or field period. (NS)

103 The Earth’s Environments (4) Contemporary problems and solutions related to nature and human disturbance of the environment. Topics include: natural hazards, global climate change, pollution, resource depletion. 3 lecture hours and one 2-hour lab or field period. (NS)

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 hours lecture, one 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. (NS)

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 hours lecture, one 2-hour lab, and 2 field trips. Prereq: Grade of B or better in Geology 107, grade of A in Geology 101, or permission of the instructor. Students may not receive credit for both Geology 102 and 108. (NS)

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. (NS)

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. (NS)
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. (NS)

205 Age of the Dinosaurs (3) Survey of the major groups of dinosaurs: skeletal structure, ecology, environments, evolutionary history, and extinction. May not be applied toward the geology major.

310 Mineralogy (4) Introduction to the concepts of crystal chemistry, x-ray diffraction, optical mineralogy, and geochemical analysis of the important rock-forming minerals. Laboratory includes hand-specimen, x-ray diffraction, and microscopic identification of minerals. 3 hours lecture and one 2-hour lab. Prereq: two 100-level geology courses and Chemistry 120, or consent of the instructor.

320 Paleobiology (4) Critical analysis of the preserved record of ancient life, with emphases on recognition of evolutionary patterns, processes, and extinctions; interpretation of ancient environments; and the integrated use of fossils and other geological features in solving problems of geologic correlation and age dating. Statistical and qualitative approaches applied to field and laboratory data. 3 hours lecture and one 2-hour lab. Prereq: two 100-level geology courses or consent of instructor.

330 Igneous and Metamorphic Petrology (4) Study of the properties of crystalline rocks, the processes that produce them, and the tectonic environments in which they form. Topics include interpretation of rock textures, phase diagrams, geochemical and isotopic compositions, magma generation and differentiation, effects of temperature, pressure, and fluids on mineral equilibria and kinetics. 3 hours lecture and one 2-hour lab. Prereq: 310.

340 Earth Sedimentary Processes (4) Earth surface processes, including weathering and soil formation, the hydrologic cycle, physical sediment transport, biological and chemical sedimentation, and sediment diagenesis, applied to interpretation of the stratigraphic record. 3 hours lecture and one 2-hour lab. Prereq: two 100-level geology courses and 310, or consent of instructor.

345 Geology of East Tennessee (1) Geology of the Southern Appalachians in Tennessee. 1 hour lecture plus field trips. Prereq: Completion of major core courses or consent of instructor.

370 Earth Structure and Geophysics (4) Stress and strain; mechanisms and recognition of geologic 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, recording data, regional geology. 3 hours lecture and one 2-hour lab. Prereq: Two 100-level geology courses, Mathematics 141-142, and Physics 135, or consent of instructor. Coreq: 310.

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 morphology and materials, geochemical cycles, planetary exploration. 3 hours lecture and one 2-hour lab. Prereq: 330 and 370 or consent of instructor.

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. 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 geo-physics; mechanical modeling and boundary conditions in structural geology and tectonics. 3 hours lecture. Prereq: Two 100-level geology courses and Mathematics 141, or consent of instructor.


411 Optical Mineralogy (2) Laboratory course on the principles of optical mineralogy. Use of petrographic microscope to identify rock-forming minerals with applications to petrology and environmental mineralogy. Prereq: 310.

412 Elements of X-ray Diffraction (2) Laboratory course on principles and applications of X-ray diffraction. Phase identification, quantitative determination of mineral abundances in mixtures, and crystal structure determination. Prereq: 310.

431 Geological Engineering (3) (See Civil Engineering 431.)

440 Field Geology (5) Summer field course for advanced undergraduate geology majors and first-year graduate students in geology. Taught off-campus and requires the full time of the student. The course provides a synthesis of the major aspects of the geological sciences in a societal context. Field techniques demonstrated and practiced, and applied to the solution of geologic problems. Prereq: Completion of other major core courses (310, 320, 330, 340, 370) and consent of instructor.

450 Process Geomorphology (3) Integrative approach to the development of the surface of the Earth based upon case histories, maps, remote sensing imagery; 2 lecture hours and one 2-hour lab. Prereq: Two 100-level geology courses or consent of instructor. (Same as Geography 450.)

455 Basic Environmental Geology (3) Applications of the geological sciences toward a comprehension of the effects of geological processes on humans and the effects of human activities on the earth’s environments. Prereq: One 100-level geology course or consent of instructor.

460 Principles of Geochemistry (4) 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. 3 hours lecture and one 2-hour tutorial. Prereq: Chemistry 120-130, Mathematics 141-142, recommended 330 or consent of instructor.

470 Applied Geophysics (3) Basic principles geophysical exploration, with emphasis on applications to environmental problems. Includes seismic and electromagnetic methods. 3 hours lecture. Prereq: 6 hours of geology courses numbered above 300 and Physics 135-136 or equivalent, or consent of instructor.

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, geomagnetism, chemical and isotopic processes of the interior, and the earth’s temperature. Historical perspective on major controversies of the past, and problems unresolved today. 2 lectures and 1 discussion period. Writing-emphasis course. Prereq: 16 hours geology courses numbered 300 and above.

480 Principles of Economic Geology (4) Ore-forming processes, classification of mineral deposits, survey of different types of mineral deposits with examples, and metallogenesis. 3 lecture hours and one 2-hour lab. Prereq: 310, 330 or equivalents. Recommended: 460.

485 Principles of Hydrogeology (3) Physical principles of flow, flow equations, geologic controls, aquifer analysis, water well design/testing, introduction to transport processes. Prereq: one 100-level geology course, Mathematics 141-142, and Physics 135 or 136 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 sequence. 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 in the language and world business 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. (CC)

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. Prereq: 202 or equivalent: May be repeated. Maximum 6 hours.

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. 332 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, figures, 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. Writing-emphasis course. May be repeated with the approval of the department. Maximum 6 hours. (Same as Judaic Studies 350.)

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. Maximum 6 hours.

416 Metropolis 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 101-102 or simultaneous enrollment in that sequence 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-level courses or equivalent, excluding 331-332.

420 Selected Topics in German Literature from 1750 to the Present (3) Prereq: 6 hours of 300-level courses excluding 331-332 and courses in English translation, or equivalent.

425 Introduction to Descriptive Linguistics (3) (See French 425.)

426 Methods of Historical Linguistics (3) Phonetic, 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 French 426; Linguistics 426; Russian 426; Spanish 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-level courses or equivalent, excluding 331-332.

432 German Creative Thinking: Interdisciplinary Dialogues (3) Interdisciplinary connections 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-level 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-level courses or equivalent, excluding 331-332.

435 Structure of the German Language (3) Contrastive English-German segmental and suprasegmental phonemes, contrastive 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 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 1 hour credit per semester. May be repeated. Maximum 3 hours.

497 Senior Honors (1-6) Admission by consent of department. May be repeated. Maximum 6 hours.

GLOBAL STUDIES (440)

250 Introduction to Global Studies (3) (See Sociology 250.) (CC)

393 Global Justice and Human Rights (3) (See Philosophy 393.)

GREEK

See Classics.

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 health 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, 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 strategies.

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. Students become familiar with organizing and presenting health content, health materials, health curricula, community resources, and communicating healthful lifestyle.

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 110.

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: 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 and safety problem. Various types of instructional/educational and intervention programs.

406 Death, Dying, and Bereavement (3) Aspects of dying, death and handling the trauma of loss. 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 women 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, administration, implementation, methodology, and evaluation. Prereq: 300, 375.

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 12 hours.

475 Directed Independent Studies (1-3) Individual identification and study of a health/wellness or health promotion problem/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. Usually taken in final semester. Satisfactory/No Credit grading only.

HEBREW (458)

141-142 Elementary Modern Hebrew I, II (4,4) (See Asian Studies 141-142.)

241-242 Intermediate Modern Hebrew I, II (4,4) (See Asian Studies 241-242.) (CC)

HIGHER EDUCATION ADMINISTRATION (461)

200 Student Leadership Development (3) Designed to enhance the knowledge and skill of emerging student leaders and includes theoretical and experiential content related to leadership role, skill, and effectiveness. Satisfactory/No Credit grading only.

455 Seminar in Student Leadership (1) Topics to be assigned. Designed to develop knowledge and skills in leadership roles for resident assistants, student government leaders, student activities, and other student organizations. May be repeated. Maximum 3 hours.

HISTORY (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. (CC)

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. (CC)

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.) (CC)

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. (CC)

303 History of the Roman Republic (3) Roman history, 8th-century BC-27 BC; origins of Rome, development of the Republican constitution, growth of Roman imperialism, Romans and Greeks, collapse of the Republic, rise of Octavian. Writing-emphasis course. (Same as Classics 303.)

304 History of the Roman Empire (3) Roman history, 27 BC-AD 211; age of Augustus, expansion of Roman citizenship; Flavian and Antonine dynasties; barbarians and Romans; the Second Sophistic; the Severans. Writing-emphasis course. (Same as Classics 304.)

305 History of the Late Roman Empire (3) AD 197-491. The Severan empire and the third-century crisis; Diocletian and Constantine; the Christian empire; rise of bureaucratic government; the development of barbarian kingdoms; the fall of the western empire; from Roman to Byzantine in the east. Writing-emphasis course. (Same as Classics 305.)

307 Honors: Introduction/Historical Problems (3) Historical analysis, philosophy of history, 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.)

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, with an 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, 1750-1914 (3) Political, industrial and intellectual 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.


322 Christian Thought in Late Antiquity (3) (See Religious Studies 322.)

323 Deviance and Persecution in the Christian West, 1100-1700 (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 1688. 331—1689 to the present. Medieval state, church, and society; origins of Anglo-American law, the monarchy and parliamentary government, the Reformation, 17th-century revolutions, commercial, agricultural and industrial revolutions; class conflict, empire, the welfare state; world wars, economic crisis.

334-335 History of Germany (3.3) 334—Germany I: To 1815. The First Reich’s fortune and failure. The development of the German lands, from the medieval empire to its disintegration, through dynastic and religious realignments, to the Austrian-Prussian dualism in the time of Frederick the Great and Maria Theresa, culminating with the end of the older order in the Age of Napoleon. 335—Germany II. Since 1800. The quest for nationhood. The evolution of modern Germany through revolution, industrialization and wars, from Bismarck’s Confederation, to Bismarck’s Second Reich, to the Weimar republic to Hitler’s Third Reich, to Adenauer’s Federal Republic and the present nation.

339 Modern Ireland, 1760-Present (3) Ireland’s social, political, economic, and cultural history. Themes include Ireland’s status as England’s first colony from the Norman period to Cromwell and beyond, peasant revolt, Catholic-Protestant antagonism, nationalist revolutionary movements, the famine, home rule, partition, and independence in the 20th-century, with continuing sectarian tensions.

340-341 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 programs, culminating in mass murder and genocide against the Jews of Europe. 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-18th-century. Writing-emphasis course.

351 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.

352 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.

353 The Civil War and Reconstruction Eras, 1860-1877 (3) An examination of the major political, economic, and social developments in the United States during the Civil War and Reconstruction eras.

354 United States, 1877-1933 (3) America’s political, economic, and social development from the Gilded Age through the Great Depression.

355 United States, 1933 to the Present (3) American experience from Roosevelt’s New Deal through World War II and the Cold War to present. Emphasizes domestic history but includes military and foreign policy.

356 The 1960s in America (3) The politics, social movements, and cultural rebellions of the 1960s. Topics include race riots, antiwar protests, new art forms, Great Society legislation, the rise of neoconservatism, empowerment movements by people of color, Cold War brinksmanship in Cuba, and the escalation of ground and air wars in Vietnam. Writing-emphasis course. (Same as American Studies 356.)

360-361 History of Latin America (3.3) 360-Colonialism and Independence, 1500-1825. 361-National Development, 1825 to present. Writing-emphasis course. (Same as Latin American Studies 360-361.)

366 History and Archaeology of Mesopotamia (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 inter-societal interaction. Writing-emphasis course.

369-370 History of the Middle East (3.3) 369—Rise and spread of Islamic civilization to the 6th-century. 370—The Middle East from the 6th-century to the present. Impact of the Western and of current political trends 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 to European colonization, 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 BCE-600 CE). 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, the Haskalah; 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.

389-390 History of China (3.3) 389—China to 1600. Surveys the history of Chinese society from the Neolithic Revolution to 1600: governmental structure, social organization, economic and technological developments, religious practices, artistic, intellectual and literary traditions, and cross-cultural exchanges. 390—China since 1600. Highlights China’s transformation from a dynastic system to a modern nation state and examines the forces, internal and external, driving China toward a major revolution in the 20th century. Writing-emphasis course.

391 Chinese Intellectual History (3) Surveys the history of intellectual traditions in China through the present. Examines the formation and transformation of cultural values, the social and political roles of intellectuals, and interactions between elite and popular cultural patterns. Writing-emphasis course.
392 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. Students who have received credit for 365 may not receive credit for 392. Writing-emphasis course.

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 confrontations 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) (See African and African-American Studies 421.)

429 Medieval Intellectual History (3) The evolution of thought in Europe from late antiquity to the advent of Humanism, especially connections between major thinkers and their social, economic, and professional contexts. Writing-emphasis course.

430-431 European Intellectual and Cultural History (3,3) 430—Renaissance to Revolution, 1300-1789. 431—Romanticism to Relativism, 1750-Present.

432 Women in European History (3) Comparative analysis of the roles of women in Medieval, Renaissance and Victorian Europe. Relationship 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.)

433 Southeastern Indian History (3) Southeastern Indian history from the protohistoric period to the present. Interaction of Euroamerican, 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, aridity, and the ongoing debate over 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 relationship. 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 Civil War (3) Africans in American society from the colonial period to the Civil War. Impact of the African slave trade on the cultural, economic, and social development of the colonies; slave culture, adaptation, and resistance; freed black people; and the formation of an African-American identity. Writing-emphasis course. (Same as African and African-American Studies 445.)

446 The African-American Experience from the Civil War to the Present (3) Topics in 19th and 20th century African-American history. Writing-emphasis course. (Same as African and African-American Studies 446.)

449 History of Tennessee (3) Tennessee’s history from the 18th century to the present.

450 History of United States 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. Writing-emphasis course. (Same as Military Science and Leadership 430.)

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.)

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 democratization. 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 United States Foreign Relations Since World War 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. Writing-emphasis course. May be repeated. Maximum 9 hours. (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. Writing-emphasis course. May be repeated. Maximum 9 hours.

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, 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. Writing-emphasis course. 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, RESTAURANT, AND TOURISM (514)

101 Food Quality Principles (3) Scientific principles involved with selection, preparation, evaluation and safety of quality food. 2 hours and 1 lab.

102 Microcomputer Applications (3) (See Retail and Consumer Sciences 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 Retail and Consumer Sciences 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) Operational theory 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: 119 or consent of instructor.

311 Developing a Diverse Service Workforce (3) Personnel management procedures and policies to develop a diverse service workforce. Topics include leading organizational change; labor cost; employee review process retention issues. Prereq: 210 or 211. (Same as Retail and Consumer Sciences 311.)

326 Food and Lodging Cost Control (1-3) 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 Point (HACCP) (1) Students will be eligible to become ServSafe certified. Prereq/Coreq: 210.

360 Issues and Trends in Consumer Service (3) (See Retail and Consumer Sciences 360.)

390 Professional Development (3) Development of skills important to career success; focus on business communications, time and stress management, motivational and negotiating skills. Prereq: English 101-102. Prereq/Coreq: 311, 326, or Retail and Consumer Sciences 310 and progression into the program. (Same as Retail and Consumer Sciences 390.) (W/F)

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 and 390. 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 the use 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, progression into the program or consent of instructor.

435 Conventions and Meetings: Pursuit and Attainment (3) Discussion of types of conventions/meetings, roles of meeting planners, identifying decision makers, site selection, negotiating, budgeting, marketing and gaining commitment from group. Prereq: 210, 211, 390 or consent of instructor.

440 Special Topics: Hotel, Restaurant, and Tourism (1-3) Developments, issues and problems in hotel and restaurant, and tourism. Topics variable. May be repeated. Maximum 6 hours.

445 Advanced Food Production and Service Management (3) Application of management concepts in menu design, personnel, cost control and production and service of food. 2 hours and lab. Prereq: 390 or consent of instructor.

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, Restaurant, and Tourism (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.

HUMAN RESOURCE 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 or 341.


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 learner and program evaluation that occurs in occupational and educational settings. Conducting learner and program evaluation becomes one of the most critical competencies for trainers and educators in organizations today. By completing this course, the students will understand the concepts of performance assessment, different approaches of program evaluation, procedures and 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. Prereq: Junior or senior standing. May be repeated. Maximum 6 hours.

**HUMAN SERVICES (532)**

440 Human Services Field Work (6) Practical field experiences 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 function of human services profession; provides direct service in a supportive learning setting. Prereq: Progression to the major, 380, 400, 420. For majors only. Satisfactory/No Credit grading only.

441 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 services lecture. 2 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)

**INDUSTRIAL ENGINEERING (556)**

202 Work Methods and Measurement (3) Productivity and work design. Techniques of work methods design including flow, activity, and worker machine charts as well as work methods improvement techniques and procedures. Human work design criteria for the improvement of work methods. Stopwatch time studies, predetermined time systems, and work sampling are used to establish, document, and maintain time standards, standard data, and allowances. Learning curves and wage payment systems. 2 hours lecture. 2 hours lab. Prereq: Completion of required freshman engineering curriculum. Coreq: Statistics 251.

250 Sophomore Seminar (1) Exposure to the engineering design process through an apprenticeship with senior design teams in Industrial Engineering 422. Apprentices will maintain a journal describing their activities 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.

204 Introduction to Human Factors Engineering (3) Human capabilities and limitations affecting work, work place, 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, 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 and 1 lab. Prereq: 202, 310.

310 Operation Research in Industrial Engineering II (3) Network models including PERT-CPM, introduction to nonlinear programming, dynamic programming, stochastic processes, and queueing theory. Basic decision analysis techniques and their applications in engineering practice. Prereq: 300, Mathematics 241.


350 Junior Seminar (1) The role of the industrial engineer in the fields of specialization; necessary training for each specialization, and projected career opportunities. Principles of written communications in science and engineering. Topics and activities include case studies, literature searches, and preparation of written engineering reports including abstracts, executive summaries, and recommendations. 2-hour lab. Prereq: Junior standing in industrial engineering or consent of instructor. Satisfactory/No Credit grading only, (WC)


404 Industrial Engineering Applications (1) 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. Satisfactory/No Credit grading only.


421 Information Systems Analysis and Design (3) Systems engineering approach to analysis and design of systems of information. Topics include: system development life cycle, system analysis methodologies, data analysis techniques, system design, joint application design, and rapid application design. Lab introduces analysis and design software tools. 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 definitions, analysis, and presentation with considerations for engineering standards and realistic economic, environmental, ethical, safety, social, political, and other pertinent constraints. Prereq: To be taken in student’s semester of graduation.

427 Introduction to Lean Systems (3) Introduces a framework to implement improvements within an enterprise. This framework will focus on designing both the physical system and the associated information system. The students will be introduced to the basic concepts of facilities design based upon process design and requirements. The design of the physical and information systems will be based on integrating the concepts, terminology, and tools of lean enterprise and Six Sigma. Activities will include case studies, industry based projects, and the preparation of written engineering reports. Prereq: Senior standing in major or consent of instructor. Coreq: 306, 402.

440 Process Improvement through Planned Experimentation (3) Review of fundamentals of continuous improvement, advanced statistical process control 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.

450 Senior Seminar (1) Selected topics of interest to industrial engineers, including ethics, life-long learning, contemporary issues in engineering. Formal oral presentations and the preparation of articles by the students on the selected topics. 2-hour lab. Prereq: Senior standing in industrial engineering or consent of instructor. Satisfactory/No Credit grading only.

454 Visual Basic Applications in Engineering (3) Fundamentals of designing, implementing, and distributing certain Visual Basic applications. Transform problems into programming paradigms, and encode solutions using the Microsoft Visual Basic 6 rapid application development tool. Develop an understanding of the Visual Basic event-driven programming concepts, terminology, and available tools. Demonstrations and class discussion will supplement the provided class notes. Practical problems and projects will be assigned. Prereq: 421 or consent of instructor.

455 Human-Computer Interaction (3) Introduction to the analysis, design, production, and implementation of systems requiring interaction between humans and computers (HCI). Includes human sensory systems, human memory capacity, computer hardware/software requirements, input/output device design, and error message handling. Prereq: Junior standing in major and computer programming skills; or consent of instructor.

483 Introduction to Reliability Engineering (3) (See Nuclear Engineering 483.)

484 Introduction to Maintenance Engineering (3) (See 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. Prereq: Senior standing, consent of instructor. May be repeated once.

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 processes in technology-driven environments. Students work hands-on with modern database management systems. Prereq: 341.

442 e-Enterprise (3) Introduction to Internet enabled business processes that connect buyers, suppliers, and trading partners in dynamic, real-time information sharing partnerships. The course discusses and illustrates how the complete value chain, from procurement of raw materials on the supply side to consumer retailing and customer management on the demand side, is integrated and made potentially more efficient. Prereq: 341.

443 Business Applications and Tools (3) Advanced tools associated with spreadsheets and databases, including the creation of objects, macros (using Visual Basic algorithms), pivot tables, and array formulas for use in the design and development of object-oriented applications. This course is required for the IM/IC/CI concentration. Prereq: 341.

INFORMATION SCIENCES (560)

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.

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.

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.

350 Information Consumer (3) Information in society, information economy, knowledge/learning society; publishing and information providers: hosts, bulletin boards, nets; information overload/anxiety, science fraud, gatekeeping concepts; updating systems, environmental scanning; information consumption techniques.

450 Writing About Science and Medicine (3) (See Journalism and Electronic Media 450.) (WC)

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.

INSTRUCTIONAL TECHNOLOGY AND EDUCATIONAL STUDIES (570)

495 Special Topics (1-3) Topics to be assigned. May be repeated. Maximum 12 hours.

INTERDISCIPLINARY PROGRAMS (581)

100 Selected Topics (1-3) May be repeated. Maximum 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. Maximum 12 hours. Satisfactory/No Credit or letter grade.

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. 3-hour studio. Open only to majors in interior design and architecture. Prereq: 141 or consent of instructor.

172 Introduction to Microenvironments (3) Human perceptions in micro-scale environments (residential, commercial, public spaces). Introduction to basic analytic and behavioral programming techniques. 3-hour studio. Open to interior design students only. Prereq: 171, Architecture 171, 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. (Same as Urban Studies 200.)

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 Architecture 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. 6-hour studio. Prereq: 271.

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, 173 or consent of instructor.

312 History of 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. 3-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. 6-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. 6-hour studio. Prereq: 371, Architecture 231.

400 Proxemics (2) Analysis of space and behavior within a cultural context. Application to design and the design process. Examination of theoretical foundations and concepts from environment and behavior. Simulation techniques and methods for identifying behavioral design requirements, 2-hour studio. Prereq: 200, 231. Coreq: 471 or consent of instructor.

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.

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.

433 Digital Graphics for Interior Design (3) Theory and techniques of visual problem solving as applied to application of interior design. 3-hour studio. Prereq: 272, Architecture 231, cumulative 3.0 GPA.

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. (QR)

464 Environmental Factors in Design (3) Human factors and associated research techniques and design methodologies related to the built environment.

471 Advanced Interior Design I (6) Non-residential studio problems of advanced complexity; integrates and extends previous experiences utilizing systematic design methodologies. 6-hour studio. Prereq: 372, 420. Coreq: 400, or consent of the instructor.

472 Advanced Interior Design II (6) Comprehensive studio problems of advanced complexity; integrates and extends previous experiences utilizing systematic design methodologies. 6-hour studio. Prereq: 471 or consent of instructor.

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. 2-hour lecture and 2-hour studio. Prereq: 471 or Architecture 372 or consent of instructor.

491 International Study (1-15) Individual or group study 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 Business will provide an overview of the value of language study and international cultural awareness in world business. Restricted to students majoring in language and world business. See 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. (CC)

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. Writing-emphasis course. Prereq: 212 or consent of instructor. (Same as Medieval Studies 401.)

402 Petrarch and Boccaccio (3) Writing-emphasis course. 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.

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. Writing-emphasis course.

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. Writing-emphasis course. May be repeated. Maximum 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. Satisfactory/No Credit grading only.

491 Foreign Study (1-15)

201 Writing for Mass Media (3) Principles and practice of news writing for print and electronic media. Comprehensive overview of the major forms of writing for the mass media. Not available for majors in the College of Communication and Information. Prereq: English 102. (WC)

203 Print/Web 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. Prereq: 200.

275 Introduction to Electronic Media (3) Lecture and lab course providing students with an overview of radio, television, cable, satellite, and the Internet. Includes history, programming, regulations, and media effects. Prereq: Communication and Information 150.

280 Communication Graphics (3) Principles and practice in the visual aspect of communication. Emphasis on graphic design, typography, illustration and photography, printing and production techniques and publication design. Lecture and laboratory. Prereq: 200 or 201, or consent of instructor.

290 Photожournalism (3) Principles and practice of photography as a creative tool of communication. Basic camera technique, digital photography, historical and contemporary photojournalism. Lecture and laboratory.

302 Readership and Audience Analysis (3) Measurement and analysis of readership/audience. Breadth overview of methods used for newspaper, magazine, radio, television, cable, and the Internet. Applications to both internal decision-making and external communication in media. Prereq: 275 or consent of instructor.


315 Print/Web News Writing and Reporting (3) Gathering and writing news for publication in magazines and newspapers. Prereq: 203.

320 Mass Media Commercial Writing and Promotion (3) Study of media (print, radio, television, cable, Internet) commercial writing and promotion with an emphasis on writing persuasive messages. Analysis of markets and research data. Planning promotional campaigns. Prereq: 200 and 275.

335 Electronic Media Production (3) Introduction to the basic production tools and techniques used to develop effective media 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 Electronic Media Performance (3) Development of vocal, visual, and performance skills for announcers, interviewers, newscasters, and reporters. Laboratory hours required. Prereq: 275.

400 Mass Communication Law and Ethics (3) Emphasis on legal issues affecting print and electronic media, including libel, privacy, copyright, free press-fair trial, governmental regulations of advertising, electronic media and public relations. Also includes ethical standards and practices. Prereq: Consent of instructor. (Same as Legal Studies 400.)

411 Electronic News Gathering (3) Writing, reporting, shooting, editing, and producing for the electronic news media. Lecture and lab course providing students with experience as reporters/producers for a television and cable news program. Includes an overview of electronic news-gathering equipment as well as non-linear video editing. Prereq: 311.

412 Opinion Writing (3) Analysis of editorial positions and practices. Writing editorials/columns for newspapers, magazines, corporate publications, and electronic media (radio, television, cable, Internet), with emphasis upon study and use of rhetorical devices and logic. Prereq: Consent of instructor.

414 Magazine and Feature Writing (3) Techniques of writing features and in-depth articles for mass circulation and specialized magazines or newspapers. Organizing and presenting material, with attention to problems in areas such as business, science, agriculture, and the humanities. Prereq: 203 or consent of instructor. (WC)

415 Magazine Industry Workshop (3) Introduction to the magazine industry including management, design, writing and editing, and interactivity. Analysis of print and electronic format magazines. Planning new products for the marketplace. Prereq: 414 or consent of instructor.

420 Media Sales (3) Problems and practices of newspaper, radio, television, cable, and Internet advertising sales. Practical experience in radio and television sales. Use of ratings and new technology in sales presentations. Prereq: 302 and 320.

430 Public Affairs Reporting (3) Reporting (including database reporting) and writing about courts, government and public agencies. Event and issue-oriented journalism of politics and public affairs. Prereq: 315.

433 Editing and Layout for Print/Web (3) Editing and layout for newspapers, magazines and online publishing. Prereq: 203 or consent of instructor.

435 Electronic Field Production (3) Basic principles of digital video production on location. Emphasis on concepts relating to message design, development, and production in the field. Includes writing, digital shooting, and non-linear editing for non-news formats. Prereq: 335 or consent of instructor.

440 Corporate Video (3) Examination of the special requirements of business, industrial, educational and medical uses of video. Includes management, budgeting, planning, producing, and evaluating projects. Students learn digital video production and non-linear editing. Prereq: 435 or consent of instructor.

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. (WC)

450 Writing about Science 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) (WC)

451 Environmental Writing (3) Writing for news media (including the Internet) on such environmental issues as sprawl, forests, air pollution, energy, and invasive species. Students hear presentations from and interview experts in environmental science and reporting. Exemplary environmental writing is analyzed. Prereq: Consent of instructor. (WC)

455 Issues in Science Communication (3) Topics vary. Prereq: Consent of instructor. May be repeated.

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. (WC)

457 Media and Society (3) Media processes and effects on society. Major theories/research are introduced and applied to current issues. Prereq: 200 and 275 or consent of instructor.


465 Media and Diversity (3) Media coverage and portrayal of various social groups based on gender, class, and race/ethnicity. Effects of media on public perceptions and attitudes toward these groups. Discussion of historical and legal implications of media effects. (Same as Women's Studies 465.)
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<th>Course Code</th>
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<tr>
<td>470</td>
<td>Cable, Broadband, and Interactive Digital Media (3)</td>
<td>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. Regulatoty, policy, programming, and management issues arising from new media and digital technologies. Prereq: 275 or consent of instructor.</td>
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<tr>
<td>475</td>
<td>Sports Writing (3)</td>
<td>Writing sports stories, features and columns. Sports writing is considered from the standpoint of sports reporters, sports information specialists and others with an interest in writing about sports.</td>
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<td>485</td>
<td>Media Management (3)</td>
<td>Business policies and practices of newspaper, broadcast, cable, and Internet operations. Departmental functions, cost and income analysis, leadership styles and techniques with an emphasis on mid and senior level management. Job-hunting guidelines provided. Prereq: 6 hours math and/or accounting, and senior standing.</td>
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<tr>
<td>488</td>
<td>Web Publishing (3)</td>
<td>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.</td>
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<td>491</td>
<td>Foreign Study (1-15)</td>
<td>Advance approval of hours and topics by advisor required for registration. May be repeated. Maximum 15 hours.</td>
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<td>492</td>
<td>Practicum (1-2)</td>
<td>Work and learning experience at newspaper, radio, television, cable, Web, or other non-broadcast facilities. Final written report required. Prereq: Senior standing or consent of instructor. Satisfactory/No Credit grading.</td>
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<td>493</td>
<td>Independent Study (3)</td>
<td>Prereq: Consent of instructor. May be repeated. Maximum 6 hours.</td>
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<td>494</td>
<td>Special Topics (3)</td>
<td>Topics vary. May be repeated. Maximum 6 hours.</td>
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<td>498</td>
<td>Internship (3)</td>
<td>Full-time (30-40 hours 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 standing, completion of core curriculum and at least 15 hours of Journalism and Electronic Media courses, GPA 3.0 or better, and consent of unit head.</td>
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<td>311</td>
<td>Ancient Hebraic Religious Traditions (3)</td>
<td>(See Religious Studies 311.)</td>
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<td>312</td>
<td>Religious Aspects of Biblical and Classical Literature (3)</td>
<td>(See Religious Studies 312.)</td>
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<td>320</td>
<td>Women and Religion (3)</td>
<td>(See Religious Studies 320.)</td>
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<td>322</td>
<td>Medieval Philosophy (3)</td>
<td>(See Medieval Studies 322; Philosophy 322.) (WC)</td>
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<td>350</td>
<td>German-Jewish Topics in Literature and Culture (3)</td>
<td>(See German 350.)</td>
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<td>History of the Middle East (3)</td>
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<td>381</td>
<td>Introduction to Judaism (3)</td>
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<td>History of Jewish Civilization I (3)</td>
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<td>Contemporary Jewish Thinkers (3)</td>
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<td>The Crusades and the Medieval Christian-Muslim Relations (3)</td>
<td>(See History 395.)</td>
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<td>405</td>
<td>Modern Jewish Thought (3)</td>
<td>(See Religious Studies 405.)</td>
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<td>425</td>
<td>Early Christian and Byzantine Art to 1350 (3)</td>
<td>(See Art History 425.)</td>
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<td>431</td>
<td>Medieval Art of the West 800-1400 (3)</td>
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<td>484</td>
<td>Studies in Jewish History (3)</td>
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**LATIN**

See Classics.

**LATIN AMERICAN STUDIES (600)**

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451 Criminal Justice (3) (See Sociology 451.)
455 Society and Law (3) (See Sociology 453.)
469 Freedom of Speech (3) (See Communication Studies 469.)
470 International Law (3) (See Political Science 470.)
490 Language and Law (3) (See English 490.)
493 Independent Study (1-3) Prereq: Consent of Legal Studies chair. May be repeated. Maximum 3 hours.
494 Internship (3) Prereq: Consent of Legal Studies chair.
496 The Rhetoric of Legal Discourse (3) (See English 496.)
499 Mock Trial (1) Prereq: Consent of Legal Studies chair. May be repeated. Maximum 8 hours.

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.
321 Introduction to Old English (3) (See English 321.)
371 Foundations of the English Language (3) (See English 371.)
372 The Structure of Modern English (3) (See English 372.)
400 Topics in Linguistics (3) Content varies. May be repeated. Maximum 6 hours.
411 Linguistic Anthropology (3) (See 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) (See French 425.)
426 Methods of Historical Linguistics (3) (See German 426.)
429 Romance Linguistics (3) (See French 429.)
431 Topics in Hispanic Linguistics (3) (See Spanish 430.)
435 Structure of the German Language (3) (See German 435.)
436 History of the German Language (3) (See German 436.)
471 Sociolinguistics (3) (See English 471.)
472 American English (3) (See English 472.)
474 Teaching English as a Second or Foreign Language I (3) (See English 474.)
476 Second Language Acquisition (3) (See English 476.)
477 Pedagogical Grammar for ESL Teachers (3) (See English 477.)
485 Special Topics in Language (3) (See English 485.)
490 Language and Law (3) (See English 490.)
491 Foreign Study (1-15)
492 Off-Campus Study (1-15)
493 Independent Study (1-15)

LOGISTICS (626)
310 Intermediate Logistics (3) The concepts, principles, and methods used to plan, organize, and manage logistics activities in a global environment. Activities covered include: customer service, order fulfillment, inventory, materials and distribution planning, transportation, warehousing, and network design. Prereq: Business Administration 331.
411 Logistics Analytical Methods I (3) Introduction to the principle analytical tools and models that are used in logistics; application of the analytical tools to logistics problems; using these techniques to support negotiations in a global business world. Prereq: 310.
412 Logistics Analytical Methods II (3) Advanced analytical tools and techniques used to solve strategic, tactical, and operational global supply chain problems; managing the use of quantitative analytical tools in logistics. Prereq: 310. Coreq: 411.
413 Logistics Operations Management (3) Analysis of logistics operations and management techniques applied to warehousing/distribution center operations, purchasing and operation of transportation services, and logistics personnel management. Prereq: 310. Coreq: 411.
421 Procurement and Supply Management (3) Addresses the processes that facilitate the structure, development, and management of value added transactions and relationships between supplier and customer organizations in a global supply chain context. The course examines the management of the business purchasing function, including supplier selection and development, quality control, cost management, and performance measurement. Prereq: 411.
460 Strategic Logistics in a Global Supply Chain Environment (3) Capstone course for logistics, with emphasis on strategic logistics from a global supply chain perspective. Integrates logistics concepts, framework, processes and tools learned in previous logistics coursework. Prereq: 411.
492 Logistics Off-Campus Study (1-6) Prereq: Consent of instructor. Satisfactory/No Credit grading only. May be repeated. Maximum 6 hours.
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 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 junior standing.
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.
431 Human Resource Management I (3) Theory, methods, and issues pertaining to successful personnel management. Prereq: Business Administration 341, senior standing.
440 Organizational Psychology (3) (See Psychology 440.)
471 International Management (3) Factors significant to the manager in international business activities. Prereq: Business Administration 361.
472 International Human Resource Management (3) Introduction to international human resource management from the perspective of the multinational firm. Topics include: globalization and human resource strategy, understanding culture in the management of human resources, intercultural differences, selecting employees for international assignments, training and developing expatriate employees, and evaluation and compensation of employees in international assignments. Prereq: Business Administration 201.
481 Experiential Cross-Cultural Leadership (3) Examination of the challenges and opportunities of leading people and organizations in cross-cultural settings through experiential methodologies. Topics include: multinational organizational culture, intercultural communications, intercultural decision-making, managing political risks, and motivation and leadership in cross-cultural settings. Prereq: Business Administration 361.
492 Management Off-Campus Study (1-6) Prereq: Consent of instructor. Satisfactory/No Credit grading only. May be repeated. Maximum 6 hours.
493 Independent Study (3) Readings, research, and special projects. Prereq: Consent of instructor. May be repeated. Maximum 6 hours.

MARKETING (632)
300 Marketing and Supply Chain Management (3) Practical applications-oriented overview of what 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: Business Administration 201 and Junior standing. 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 352.
345 Marketing Analytics (2) Develops students’ analytical and decision-making skills through specific exercises and examples that apply various statistics principles to marketing-specific content. Students learn how to organize data into customer databases and how to analyze those databases through learning of statistical techniques, decision analysis techniques, and spreadsheet analysis techniques. Prereq: Business Administration 332. Coreq: 340.

350 Customer Value Analysis (3) Examines how organizations conceptualize, gather, analyze, and interpret data needed by managers to learn about customers in markets. Topics include selected consumer/customer behavior theories, customer value determination, and selected marketing research techniques. Prerequisite: 340. Marketing major and co-concentration students only: 350 is a Prereq/Coreq for 452, 456, and 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 provided topic is different. Maximum 6 hours.

452 Product/Service Management (2) Examines how organizations deliver value to customers through product and service strategies. Topics in product management include new product development, product life cycle, product mix management, and brand marketing. Topics in services management include service design, service delivery, service quality/productivity, service failure/recovery, and role of technology. Prereq: 340. Marketing major and co-concentration students only: 350 is a Prereq/Coreq for 452.

456 Integrated Marketing Communications Management (2) 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. Marketing major and co-concentration students only: 350 is a Prereq/Coreq for 456.

458 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, territory design, and evaluation. Prereq: 340. Marketing major and co-concentration students only: 350 is a Prereq/Coreq for 458.

460 Global Marketing Strategy (3) Capstone course for Marketing to integrate concepts, frameworks, processes and tools presented in all prior coursework. Students examine the application of marketing knowledge and skills in a global context, with particular emphasis on how organizations respond with global marketing strategies. Prereq: 350 and two of the following—452, 456, or 458.

492 Marketing Off-Campus Study (1-6) Prereq: Consent of instructor. Satisfactory/No Credit grading only. May be repeated. Maximum 6 hours.

493 Independent Study (1-6) Directed research on subjects of mutual interest to student and staff member. Prereq: Consent of instructor. May be repeated. Maximum 6 hours.

MATERIALS SCIENCE AND ENGINEERING (638)

101 Advances in Materials Science and Engineering (1) Review modern advances in Materials Science and Engineering. Expose students to a variety of materials science and engineering case studies to demonstrate the societal impact of materials science and engineering profession. Satisfactory/No Credit grading only.

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 120.

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, designs and construction details to optimize properties needed for particular end uses.

250 Introduction to Materials Kinetics and Transport Phenomena (4) Mass and energy balances; reaction kinetics; steady state and transient heat transfer; viscous flow of gases and liquids; applications to synthesis and processing of engineering materials and technologies; analytical and numerical problem solving. 3 hours lecture, 1 hour lab. Prereq: Mathematics 142; Coreq: MSE 201, Mathematics 231.

260 Materials Engineering Thermodynamics (3) Thermodynamic laws; entropy, internal energy, state functions; one-component and two-component phase equilibria; characteristics of small and large molecular systems; structure and phase diagrams; material defects. Prereq: Engineering Fundamentals 152, Chemistry 130, Mathematics 142. Coreq: 201.

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 up to four times. Satisfactory/No Credit grading only.

300 Materials Laboratory Procedures (1) Thermometry, sample preparation for microscopic examination; word processing and graphics usage, data analysis, report writing. Prereq: 201.

301 Application of Statistical and Numerical Techniques in Engineering (3) (See Chemical Engineering 301.)

302 Mechanical Behavior of Materials I (3) Fundamentals of deformation and fracture in solids including metals, ceramics, polymers, and composites. Topics include: stress and strain tensors; isotropic and anisotropic elasticity; anelastic and viscoelastic deformation; plasticity; tensile testing; mechanisms of plastic deformation in crystalline solids; basic strengthening mechanisms; elementary fracture mechanics. Prereq: 201 or consent of instructor.


320 Diffusion and Phase Transformations (3) Introduction to diffusion in solids; the diffusion equations, point defects and atomic mechanisms of diffusion; Thermodynamics of phase equilibria. Introduction to the kinetics and morphology of phase transformations. Prereq: 201, 250, 260.

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.

350 Principles of Electronic, Optical, and Magnetic Materials (3) Fundamental electronic, optical, and magnetic properties of solid state materials. Basic bonding and crystallography correlations to electronic, optical, and magnetic properties of materials. Specific subjects that will be covered include: wave properties of electrons, Schroedinger’s equation, energy bands in crystals, electrical conduction in metals and semiconductors, classical and quantum mechanical treatments of optical properties, and magnetic phenomena. 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 state. 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), geometries (bulk, fibers, films, coatings) 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; Chemical Engineering 240, 240, or equivalent.

390 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. (WC)


421 Mechanical Behavior of Materials II (3) Description of stress and strain; linear elastic constitutive equations, isotropic and anisotropic moduli 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, Engineering Science 321, or equivalent.

445 Polymer Engineering Processing and Characterization Laboratory (3) Polymer film casting, film blowing, mixing and extrusion are operated and studied. Flow rates, temperatures, pressures and velocity profiles are acquired and used in finite element modeling and simulation to correlate the polymeric material properties and morphology. Supporting instrumentation includes linear viscoelastic rheometry, capillary viscometry, SEM, OM, FTIR, etc. Coreq: 201 and consent of instructor.

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 chemical engineering, mechanical engineering, civil engineering, 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.

476 Overview of Intermetallic Compounds and Composites (3) Fabrication and processing, ultrafine-grained materials nanotechnology, thermodynamics and stability, microstructural characterizations, mechanical properties, corrosion and oxidation properties, theoretical modeling, and design and industrial applications of intermetallics and composites. Laboratory, demonstrations and group projects. Prereq: 201.

480 Materials Selection in Design (3) Systematic materials selection in design. Review of material properties; use of property selection charts and indices. Materials selection, with and without shape constraints; materials processing in design; case studies. Sources of material property data, utilization of material data bases. Industrial design, aesthetics, economics, regulations, forces for changes. Prereq: Junior standing.

484 Introduction to Maintainability Engineering (3) (See Nuclear Engineering 484.)


494 Special Project Laboratory (1-3) Group or individual investigation of problems related to materials science and engineering. Prereq: 201, consent of instructor. May be repeated. Maximum 6 hours.

495 Thesis (3) Research problems in materials science and engineering with prior approval of a professor. Prereq: Senior standing or consent of instructor. May be repeated. Maximum 6 hours.

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 119, 130, 201, and 202. 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, 125, 130, or 141 who need additional help (as determined by placement exams, assessment exams, or classroom performance). Individual and computerized instruction on various pertinent algebra and trigonometry skills. Student must be concurrently enrolled in 119, 125, 130, or 141. May be repeated. Maximum 3 hours. Satisfactory/No Credit grading only.

113 Mathematical Reasoning (3) Classical and modern topics in number theory, logic, geometry, and probability with emphasis on problem solving. Consumer mathematics and other real-world applications. (QR)

115 Statistical Reasoning (3) An introduction to probability and statistics without calculus. Not available for credit to students in the College of Business Administration. (QR)

117 Honors: Mathematical Reasoning (3) Topics will be selected from: number theory, logic, geometry, elementary topology, fractals, or probability with an emphasis on problem solving. Consumer mathematics, fair division, voting theory or other real-world applications may be included. Prereq: ACT composite score of at least 31 (or 1380 SAT) or consent of instructor. (QR)

119 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. Prereq: Satisfactory placement test scores or 100. This course should not be taken to remove an entrance requirement. 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.

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: Satisfactory placement test score or 119 or 130. (QR)

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. Prereq: Satisfactory placement test score, or 119 or 130. No student who has received credit for 141 or 152 with a grade of C or better may subsequently receive credit for 125. (QR)

130 Precalculus I (4) Review of algebraic, logarithmic, exponential, and trigonometric functions for students who satisfy the course prerequisites for 141 or 151, but whose placement test scores indicate additional preparation is necessary. Coreq: 109 for students who did not study trigonometry in high school or college. Students who did not study trigonometry in high school may take the noncredit course in trigonometry simultaneously with 130. Students who have earned a grade of C or better in 141 or 151 may not subsequently receive credit for 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: Satisfactory placement test scores, or 130. (QR)

147-148 Honors Calculus I, II (4, 4) Honors version of 141-42 for well-prepared students. Students having 32 Mathematics ACT, 700 Quantitative SAT scores, or permission from the instructor may enroll in Mathematics 147. Students with the above scores and credit for Mathematics 141, an AP Calculus AB score of 5, or permission of the instructor, may enroll in Mathematics 148. Credit will not be given for both 147 and 141 or 152. (QR)

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, one year of geometry, and half a year of trigonometry in high school, plus satisfactory placement test scores, or 130. Students who receive a grade of C or better in Mathematics 141 cannot subsequently receive credit for 152. (QR)

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, number 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 graphs. 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 Gaussian 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, 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, 300.

351 Algebra I (3) Introduction to abstract algebra, emphasizing integers and polynomial rings. Prereq: 251 or 257, 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).

399 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, 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 an operating 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.

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.


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, 300 or consent of instructor.

447-448 Honors: Advanced Calculus I, II (3,3) Honors version of 445-446. Prereq: 341 or consent of instructor.

453 Matrix Algebra II (3) Advanced topics in matrix theory, including the Jordan canonical form. Prereq: 251 or 257.

455-456 Abstract Algebra I, II (3,3) Introduction to algebraic structures such as groups, rings, fields, vector spaces and linear transformations. Prereq: 251 or 257 and 300, or consent of instructor.

457-458 Honors: Abstract Algebra I, II (3,3) Honors version of 455-456. Prereq: 351 or consent of instructor.

460 Geometry (3) Axiomatic and historical development of neutral, Euclidean, and hyperbolic geometry stress 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, continua, and topological invariants. Prereq: 241 or 247, 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, or Computer Science 102).

490 Readings in Mathematics (1-3) Open to superior students with consent of department head. Independent study with faculty guidance. Prereq: Agreement of faculty mentor to supervise independent work. May be repeated. Maximum 9 hours.

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, 323.

497 Undergraduate Honors Seminar (2) Open to students in the mathematics department undergraduate honors program. Forum for presentation of student theses and other undergraduate research projects. May be repeated. Maximum 8 hours. Satisfactory/No Credit grading only.

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. Prereq: Consent of instructor. May be repeated. Maximum 9 hours.

MATHEMATICS 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 (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 152, 202; Mathematics 142.


331 Thermodynamics (3) Energy and laws governing energy transformations; thermodynamic properties; thermodynamic cycles; ideal gas processes; application to engineering problems. Coreq: Mathematics 241.


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. Prereq: Aerospace Engineering 341, Electrical and Computer Engineering 301. Coreq: 363.

363 System Dynamics (3) Free and forced vibrations of damped and undamped lumped parameter systems; transient and frequency response of lumped parameter systems; introduction to feedback control systems. Coreq: 345.


401 Thesis (3) Research and design problems in mechanical engineering with prior approval of instructor. Prereq: Senior standing or consent of instructor.

405 Microcomputer-Based Control of Electromechanical Systems (3) Application of microcomputers to control electromechanical devices. Application and theory: dynamics of machine control, assembly language programming, microcontroller architecture, stepping and DC motor control, photoelectric devices, A/D, D/A, integrated circuits. Prereq: Electrical and Computer Engineering 201 or 301 and consent of instructor.


410 Professional Development (2) Topics relating to professional responsibility, communications, and organization. Formal oral presentation by each student on an engineering topic chosen by the student and approved by the instructor. Prereq: English 102, Senior standing. (OC)

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 lab per week. Prereq: 344, 345. Coreq: 475.

450 Mechanical Engineering Design I (1-4) Design process, synthesis, design studies. Coreq: 363. May be taken once for 1-4 hours credit.


452 Finite Element Analysis (3) Conversion of fundamental conservation principles in mechanics to simulation form via finite element implementation; applications in heat transfer, solid mechanics, mechanical vibrations, fluid mechanics and heat/mass transport. Extensive computer lab experiments using Matlab-based and commercial software systems. Prereq: 321, 344, 363.

457 Engineering Entrepreneurship (3) Technology and innovation, technology transfer, patent protection, legal formation and intellectual property, knowledge management, generation, and transmission, creating a business plan and marketing plan, launching a technology based business, sources of capital, small business growth and operation. Prereq: Senior standing or consent of instructor.

460 Mechanical Engineering Design II (1-4) Synthesis and design of a complete mechanical engineering system. Participation in team design effort including formal oral presentations and written design report. Prereq: 450. May be taken once for 1-4 hours credit.


467 Smart Structures and Materials (3) Fundamentals of electromechanical properties of ferroelectric materials (piezoelectric and electrostrictive), shape memory alloys, and other electrically and magnetically activated materials, with application. Course includes semester project. Prereq: 231, 321.

475 Thermal Engineering (3) Thermal systems with emphasis on turbomachinery, heat exchangers, combustion and system analysis and design including second law and economic analysis. Prereq: 332, 344.

480 Introduction to Hybrid Electric Vehicles (3) Steady-state HEV force and power modeling. Introduction to internal combustion engines, motors, energy storage systems and control strategies. Powetrain design and analysis using various computer simulation tools. Coreq: 475.

483 Introduction to Reliability Engineering (3) (See Nuclear Engineering 483.)

484 Introduction to Maintainability Engineering (3) (See 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.

MECHANICAL ENGINEERING (650)

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 radioisotopes.

430-431 Hematology and Clinical Microscopy (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 broad 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. (CC)

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 types of literature produced during the period 500-1000 AD, e.g., cultural, religious, rhetorical, lyric, epic, biographical. Includes Augustine’s Confessions, Boethius’s 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) (See History 312-313.)

322 Medieval Philosophy (3) (See Philosophy 322.) (WC)

401 Dante and Medieval Culture (3) (See Italian 401.)

402 Petrarch and Boccaccio (3) (See Italian 402.)

403 Seminar in Medieval Studies (3) Interdisciplinary treatment of selected topics. Content varies. Writing-emphasis course. May be repeated.

405 Medieval Literature (3) (See English 401.)

406 Chaucer (3) (See English 402.)

410 Medieval French Literature (3) (See French 410.)

415 Medieval Architecture (3) (See Architecture 415.)

431 Medieval Art of the West, 800-1400 (3) (See Art History 431.)

441 Northern European Painting, 1350-1600 (3) (See Art History 441.)

451 The Art of Italy, 1250-1450 (3) (See Art History 451.)

475 Ancient and Medieval Political Thought (3) (See Political Science 475.)

491 Foreign Study (1-15)

492 Off-Campus Study (1-15)

493 Independent Study (1-15)

MILITARY SCIENCE AND LEADERSHIP (689)

101 Foundations of Officership (2) Discusses organization and role of the Army. Emphasizes basic life skills pertaining to fitness 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 factors that influence leader and group effectiveness. Emphasizes communication skills including active-listening and feedback techniques. Adventure training skills lab introduces land navigation, rifle marksmanship, mountaineering, and optional field-training exercises. Letter grade only.

103 Army ROTC 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 pushups, sit-ups and a two-mile run. May be repeated. Maximum 6 hours.

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.

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. (NS)

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) Basic techniques for the examination, cultivation, and identification of microorganisms. Coreq: 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 coursework; 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 coursework 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, rickettsias, chlamydias, and fungi. Prereq: 310.

429 Medical Microbiology Laboratory (2) Laboratory exercises in medically important areas 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 recognitions 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 judgments. Written reports required. A capstone course. Prereq: 320, senior standing. Only 3 hours may be counted toward the major. Writing-emphasis course. May be repeated. Maximum 6 hours.
202 Leadership and Teamwork (3) Focuses on self-development through understanding of self and group processes. Examines 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. 3 hours and 1 hour lab. 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.

302 Leadership and Ethics (4) Probes leader responsibilities that foster an ethical command climate. Applies principles of effective writing and oral communication. Builds on previous instruction 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 Advance Course Student (101, 102, 201, 202) or consent of the department head of Military Science and Leadership. Letter grade only.

400 National Advanced Leadership Camp (4) A 31-day leadership practicum held at Fort Lewis, Washington. Students are evaluated in varied leadership positions, rifle marksmanship, land navigation, field leadership reaction course, and tactical small unit leadership. Prereq: 301, 302. 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 complex case studies and simulation. 3 hours and 1-hour lab. Prereq: 301 and 302, 400, or consent of instructor. Letter grade only.

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 decision-making and leadership. 3 hours and 1-hour lab. Prereq: 301, 302, 400, 401 or consent of instructor. Letter grade only.

430 U.S. Military History, 1754 to the present (3) (See History 451.)

493 Military Leadership Topics (1) Topics on principles and styles of military leadership. Students conduct in-depth profile of a contemporary or historic military leader. Prereq: Consent of instructor. May be repeated. Maximum 4 hours. Letter grade only.

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, 320. Letter grade only.

201 Field Experience in General Music (1) Observing and assisting in an approved elementary or middle school classroom. May be repeated. Maximum 3 hours. Satisfactory/No Credit grading only.

210 Class Woodwind Methods I (1) Structure, use, techniques of playing, care and repair of the clarinet 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.

211 Class Woodwind Methods II (1) Structure, use, techniques of playing, care and repair of the flute and saxophone 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 upper brass 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 lower brass 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 training 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. Maximum 2 hours.

260 Eurhythmics (1) Principles and practice of eurhythmics, as developed by Emile Jaques-Dalcroze. Prereq: Consent of instructor. May be repeated. Maximum 2 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: 2 years of music theory or consent of instructor. Letter grade only.

320 Conducting II (2) Developing advanced baton technique. Multiple rhythms, modern beat patterns and their variations. Studying, analyzing 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.
200 Solo Class (0)

301 Junior Recital (0) Prereq: Music Theory 120, 140; Musicology 200 or 110. Coreq: 300-level Music Performance.

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) Prereq: Music Theory 220, 240; Musicology 220; Music General 301. Coreq: 400-level Music Performance.

411 Lecture Recital (0) Prereq: Music Theory 220, 240; Musicology 220. Coreq: 400-level Music Performance.

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 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 woodwind faculty and class members. Prereq: Consent of instructor.

340-350 String Literature and Pedagogy I, II (3,3) 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 tone 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, 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.

MUSIC KEYBOARD (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. Intended for music majors and minors. Prereq: Successful completion of music audition and theory placement exam.

210-220 Class Piano III, IV (1.1) Continuation of 110-120; 220 completes piano competency requirement; must be taken in sequence.

230 Keyboard Harmony (1) Melody harmonization, figured bass realization, and improvisation. Prereq: Music Theory 110-120.

260 Early Keyboard Instruments (1) An introduction to the harpsichord, claveichord, 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.

340-350 Piano Pedagogy I, II (3,3) Pedagogical methods and materials related to the development of principles of learning; collateral teaching experience. Must be taken in sequence.


410 Organ Practicum (1) Improvisation, hymn playing, and accompanying on the organ. Prereq: Organ proficiency at the 200 level. Prereq: Organ proficiency at the 200 level. May be repeated. Maximum 3 hours.

420-430 Piano Literature I, II (3,3) 420—from 1750 to middle 19th century; 430—middle 19th century to present.

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; pedagogical literature and methods; organ design. Prereq/Coreq: Musicology 220, 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 collateral 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 seminars.

495 Suzuki Piano Method II (2) Study of the psychology, procedures, and literature of the Suzuki Piano Method. Prereq: Consent of instructor.

MUSIC PERFORMANCE (713)

Prerequisite: By audition only. Music General 101 or equivalent.

103 Flute (1-3) By audition only. Prereq: Music General 101 or equivalent. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be taken once for 1-3 hours.

104 Flute (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 103, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be taken once for 1-3 hours.

105 Oboe (1-3) By audition only. Music General 101 or equivalent. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be taken once for 1-3 hours.

106 Oboe (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 105, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be taken once for 1-3 hours.

110 Bassoon (1-3) By audition only. Prereq: Music General 101 or equivalent. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be taken once for 1-3 hours.

111 Bassoon (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 110, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be taken once for 1-3 hours.

115 Clarinet (1-3) By audition only. Prereq: Music General 101 or equivalent. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be taken once for 1-3 hours.

116 Clarinet (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 115, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be taken once for 1-3 hours.

120 Saxophone (1-3) By audition only. Prereq: Music General 101 or equivalent. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be taken once for 1-3 hours.

121 Saxophone (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 120, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be taken once for 1-3 hours.

125 Horn (1-3) By audition only. Prereq: Music General 101 or equivalent. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be taken once for 1-3 hours.

126 Horn (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 125, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be taken once for 1-3 hours.

130 Trumpet (1-3) By audition only. Prereq: Music General 101 or equivalent. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be taken once for 1-3 hours.

131 Trumpet (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 130, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be taken once for 1-3 hours.

136 Trombone (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 135, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be taken once for 1-3 hours.

140 Baritone (1-3) By audition only. Prereq: Music General 101 or equivalent. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be taken once for 1-3 hours.

141 Baritone (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 140, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be taken once for 1-3 hours.

145 Tuba (1-3) By audition only. Prereq: Music General 101 or equivalent. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be taken once for 1-3 hours.

146 Tuba (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 145, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be taken once for 1-3 hours.

150 Percussion (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 150, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be taken once for 1-3 hours.

151 Percussion (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 150, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be taken once for 1-3 hours.

155 Voice (1-3) By audition only. Prereq: Music General 101 or equivalent. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be taken once for 1-3 hours.

156 Voice (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 155 grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be taken once for 1-3 hours.

160 Violin (1-3) By audition only. Prereq: Music General 101 or equivalent. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be taken once for 1-3 hours.
161 Violin (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 160, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be taken once for 1-3 hours.

165 Viola (1-3) By audition only. Prereq: Music General 101 or equivalent. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be taken once for 1-3 hours.

166 Viola (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 165, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be taken once for 1-3 hours.

167 Electric Bass (1-3) By audition only. Prereq: Music General 101 or equivalent. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be taken once for 1-3 hours.

169 Bassoon (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 169, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be taken once for 1-3 hours.

170 Cello (1-3) By audition only. Prereq: Music General 101 or equivalent. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be taken once for 1-3 hours.

171 Cello (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 170, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be taken once for 1-3 hours.

174 String Bass (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 174, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be taken once for 1-3 hours.

175 String Bass (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 175, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be taken once for 1-3 hours.

180 Piano (1-3) By audition only. Prereq: Music General 101 or equivalent. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be taken once for 1-3 hours.

185 Harpsichord (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 180, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be taken once for 1-3 hours.

186 Harpsichord (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 185, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be taken once for 1-3 hours.

187 Electric Bass (1-3) By audition only. Prereq: Music General 101 or equivalent. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be taken once for 1-3 hours.

188 Guitar (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 188, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be taken once for 1-3 hours.

189 Organs (1-3) By audition only. Prereq: Music General 101 or equivalent. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be taken once for 1-3 hours.

190 Organ (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 189, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be taken once for 1-3 hours.

203 Flute (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 203, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated by non-BM students. Maximum 8 hours.

204 Flute (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 204, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated by non-BM students. Maximum 8 hours.

205 Oboe (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 205, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated by non-BM students. Maximum 8 hours.

206 Oboe (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 206, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated by non-BM students. Maximum 8 hours.

210 Bassoon (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 210, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated by non-BM students. Maximum 8 hours.

211 Bassoon (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 211, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated by non-BM students. Maximum 8 hours.

215 Clarinet (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 215, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated by non-BM students. Maximum 8 hours.

216 Clarinet (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 216, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated by non-BM students. Maximum 8 hours.

220 Saxophone (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 220, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated by non-BM students. Maximum 8 hours.

221 Saxophone (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 221, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated by non-BM students. Maximum 8 hours.

225 Horn (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 225, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated by non-BM students. Maximum 8 hours.

226 Horn (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 226, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated by non-BM students. Maximum 8 hours.

230 Trumpet (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 230, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated by non-BM students. Maximum 8 hours.

231 Trumpet (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 231, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated by non-BM students. Maximum 8 hours.

235 Trombone (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 235, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated by non-BM students. Maximum 8 hours.

236 Trombone (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 236, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated by non-BM students. Maximum 8 hours.

240 Baritone (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 240, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated by non-BM students. Maximum 8 hours.

241 Baritone (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 241, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated by non-BM students. Maximum 8 hours.

245 Tuba (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 245, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated by non-BM students. Maximum 8 hours.
246 Tuba (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 245, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated by non-BM students. Maximum 8 hours.

250 Percussion (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 151, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated by non-BM students. Maximum 8 hours.

251 Percussion (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 250, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated by non-BM students. Maximum 8 hours.

255 Voice (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 156, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated by non-BM students. Maximum 8 hours.

256 Voice (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 255, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated by non-BM students. Maximum 8 hours.

260 Violin (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 161, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated by non-BM students. Maximum 8 hours.

261 Violin (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 260, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated by non-BM students. Maximum 8 hours.

265 Viola (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 166, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated by non-BM students. Maximum 8 hours.

266 Viola (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 265, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated by non-BM students. Maximum 8 hours.

270 Cello (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 270, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated by non-BM students. Maximum 8 hours.

271 Cello (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 270, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated by non-BM students. Maximum 8 hours.

272 Electric Bass (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 173, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated by non-BM students. Maximum 8 hours.

273 Electric Bass (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 272, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated by non-BM students. Maximum 8 hours.

274 String Bass (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 175, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated by non-BM students. Maximum 8 hours.

275 String Bass (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 274, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated by non-BM students. Maximum 8 hours.

280 Piano (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 181, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated by non-BM students. Maximum 8 hours.

281 Piano (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 280, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated by non-BM students. Maximum 8 hours.

283 Guitar (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 184, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated by non-BM students. Maximum 8 hours.

284 Guitar (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 283, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated by non-BM students. Maximum 8 hours.

285 Harpsichord (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 186, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated by non-BM students. Maximum 8 hours.

286 Harpsichord (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 285, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated by non-BM students. Maximum 8 hours.

289 Organ (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 190, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated by non-BM students. Maximum 8 hours.

290 Organ (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 289, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated by non-BM students. Maximum 8 hours.

293 Composition (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Theory 210, 230 grade C or higher, or consent of instructor. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be taken once for 1-3 hours.

295 Composition (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 294, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be taken once for 1-3 hours.

303 Flute (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 204, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated. Maximum 8 hours.

304 Flute (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 303, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated. Maximum 8 hours.

305 Oboe (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 206, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated. Maximum 8 hours.

306 Oboe (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 305, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated. Maximum 8 hours.

310 Bassoon (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 211, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated. Maximum 8 hours.

311 Bassoon (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 310, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated. Maximum 8 hours.

315 Clarinet (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 216, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated. Maximum 8 hours.

316 Clarinet (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 315, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated. Maximum 8 hours.

320 Saxophone (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 221, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated. Maximum 8 hours.
321 Saxophone (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 320, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated. Maximum 8 hours.

325 Horn (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 226, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated. Maximum 8 hours.

326 Horn (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 325, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated. Maximum 8 hours.

327 Horn (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 231, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated. Maximum 8 hours.

328 Horn (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 236, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated. Maximum 8 hours.

329 Horn (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 330, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated. Maximum 8 hours.

331 Trumpet (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 335, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated. Maximum 8 hours.

334 Trumpet (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 340, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated. Maximum 8 hours.

335 Trumpet (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 241, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated. Maximum 8 hours.

336 Trumpet (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 246, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated. Maximum 8 hours.

340 Baritone (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 241, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated. Maximum 8 hours.

341 Baritone (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 340, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated. Maximum 8 hours.

345 Tuba (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 251, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated. Maximum 8 hours.

346 Tuba (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 345, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated. Maximum 8 hours.

350 Percussion (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 350, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated. Maximum 8 hours.

351 Percussion (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 251, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated. Maximum 8 hours.

355 Voice (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 256, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated. Maximum 8 hours.

356 Voice (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 355, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated. Maximum 8 hours.

360 Violin (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 261, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated. Maximum 8 hours.

361 Violin (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 360, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated. Maximum 8 hours.

365 Viola (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 266, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated. Maximum 8 hours.

366 Viola (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 365, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated. Maximum 8 hours.

370 Cello (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 271, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated. Maximum 8 hours.

371 Cello (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 370, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated. Maximum 8 hours.

372 Electric Bass (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 273, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated. Maximum 8 hours.

373 Electric Bass (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 372, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated. Maximum 8 hours.

375 String Bass (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 374, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated. Maximum 8 hours.

378 Piano (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 281, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated. Maximum 8 hours.

381 Piano (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 284, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated. Maximum 8 hours.

383 Guitar (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 285, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated. Maximum 8 hours.

384 Guitar (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 383, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated. Maximum 8 hours.

385 Harpsichord (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 286, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated. Maximum 8 hours.

386 Harpsichord (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 385, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated. Maximum 8 hours.

389 Organ (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 290, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated. Maximum 8 hours.

390 Organ (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 389, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated. Maximum 8 hours.

394 Composition (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 295, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated. Maximum 8 hours.
395 Composition (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 394, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated. Maximum 8 hours.

396 Composition with Electronic Media (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Theory 210, 230, grade of C or higher, or consent of instructor. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated. Maximum 8 hours.

403 Flute (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 304, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated. Maximum 8 hours.

404 Flute (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 403, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated. Maximum 8 hours.

405 Oboe (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 306, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated. Maximum 8 hours.

406 Oboe (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 405, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated. Maximum 8 hours.

410 Bassoon (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 311, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated. Maximum 8 hours.

411 Bassoon (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 410, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated. Maximum 8 hours.

415 Clarinet (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 316, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated. Maximum 8 hours.

416 Clarinet (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 415, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated. Maximum 8 hours.

420 Saxophone (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 321, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated. Maximum 8 hours.

421 Saxophone (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 420, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated. Maximum 8 hours.

425 Horn (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 326, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated. Maximum 8 hours.

426 Horn (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 425, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated. Maximum 8 hours.

430 Trumpet (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 331, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated. Maximum 8 hours.

431 Trumpet (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 430, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated. Maximum 8 hours.

435 Trombone (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 336, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated. Maximum 8 hours.

436 Trombone (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 345, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated. Maximum 8 hours.

440 Baritone (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 341, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated. Maximum 8 hours.

441 Baritone (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 440, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated. Maximum 8 hours.

445 Tuba (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 346, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated. Maximum 8 hours.

446 Tuba (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 445, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated. Maximum 8 hours.

450 Percussion (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 351, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated. Maximum 8 hours.

451 Percussion (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 450, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated. Maximum 8 hours.

455 Voice (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 356, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated. Maximum 8 hours.

456 Voice (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 455, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated. Maximum 8 hours.

460 Violin (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 361, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated. Maximum 8 hours.

461 Violin (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 460, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated. Maximum 8 hours.

465 Viola (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 366, grade of C or better. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated. Maximum 8 hours.

466 Viola (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 465, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated. Maximum 8 hours.

470 Cello (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 471, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated. Maximum 8 hours.

471 Cello (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 470, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated. Maximum 8 hours.

472 Electric Bass (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 373, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated. Maximum 8 hours.

473 Electric Bass (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 472, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated. Maximum 8 hours.
474 String Bass (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 375, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated. Maximum 8 hours.

475 String Bass (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 474, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated. Maximum 8 hours.

480 Piano (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 381, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated. Maximum 8 hours.

481 Piano (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 480, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated. Maximum 8 hours.

483 Guitar (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 384, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated. Maximum 8 hours.

484 Guitar (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 483, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated. Maximum 8 hours.

485 Harpsichord (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 386, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated. Maximum 8 hours.

486 Harpsichord (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 485, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated. Maximum 8 hours.

489 Organ (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 390, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated. Maximum 8 hours.

490 Organ (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 489, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated. Maximum 8 hours.

494 Composition (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 395, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated. Maximum 8 hours.

495 Composition (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 494, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated. Maximum 8 hours.

496 Composition with Electronic Media (1-3) By audition only. Prereq: Music General 101 or equivalent; Music Performance 396, grade C or higher. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). May be repeated. Maximum 8 hours.

499 Improvisation (1-2) By audition only. Prereq: Music General 101 or equivalent and consent of instructor. Coreq: Ensemble appropriate to degree program (see School of Music Undergraduate Handbook). Cannot be used to satisfy applied music requirement. May be repeated. Maximum 4 times.

**MUSIC TECHNOLOGY (717)**

290 Sound Recording Techniques (3) Theory and applications of tape recording’s sound reproduction and reinforcement systems. Topics include room acoustics, audio measurements, microphones, studio and real-time processing, noise reduction, mixing, editing, monitors, system wiring, and maintenance. (QR)

340 Introduction to Computer Music Transcription (3) Exercise in notation, playback and publishing incorporating elements of word processing, graphic design, sequencing and page layout. Study of Music Instrument Digital Interface protocol as it applies to computer music workstation design. Prereq: Consent of instructor.

390 Sound Synthesis Techniques (3) Studio and real-time applications of synthesizers. Historical background, theoretical concepts, equipment interface and usage, analysis of sounds and compositions. Prereq: 290 or consent of instructor.

**MUSIC THEORY (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 rhythmical models. Includes computer lab. Should be taken concurrently with 110. Prereq: successful completion of Music Theory Placement Test or Music Theory 105, grade of C or higher. A, B, C, No Credit grading.

140 Ear Training II (1) Development of proficiency in identifying and notating melodic, harmonic and rhythmical 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 methods. Emphasis on literature of the Classic, Romantic, and Contemporary periods. Exercises in analysis, composition, and improvisation of music. Must be taken in sequence. Prereq: 210: 120, grade of C or higher, or consent of instructor. Prereq: 220: 210, grade of 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: 210, 240, grade of 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: 210, 230, grade of 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: 210, 230, grade of C or higher.

430-440 Counterpoint I, II (3,3) 430—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 16th through the 20th centuries. Prereq: 430: 210, 230, grade of C or higher. 440: 430, grade of C or higher.

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) Prereq: Consent of department head. May be repeated.

**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 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. May be repeated. Maximum 12 hours.

410-420 Song Literature I, II (2,2) 410—German songs. 420—French, Italian, Russian, Scandinavian, Czechoslovakian, British, and American art songs. No graduate credit for students in the music 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 or accompanying.

450-460 Pedagogy I, II (2,1) 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.

MUSICOLGY (706)

110 Introduction to Music in Western Culture (3) The study of style periods of Western European art music and related issues of cultural and social history. Develops listening skills and ability to respond to music articulately. Writing-emphasis course. Students who receive a grade of C or better in Musicology 200 may not receive credit for Musicology 110. (AH)

115 Music in the United States (3) Explores musical traditions of the United States. Writing-emphasis course. For non-music majors. (AH)

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. (AH)

125 Jazz in American Culture (3) The historical study of jazz as part of American culture, including its styles, key performers, and musical practices. Writing-emphasis course. For non-music majors. (AH)

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 contexts of Western European art music to 1750 through activities that include analytical listening, source readings and music score study. Develops skills in independent research, critical thinking, and expository writing. Writing-emphasis course. Prereq: 110 or 200, or consent of instructor. (AH)

220 History of Music II (3) Historical study of musical styles, practices, theories, and contexts of European art music from 1750 to present through activities that include analytical listening, source readings and music score study. Develops skills in independent research, critical thinking, and expository writing. Writing-emphasis course. Prereq: 210. (AH) (WC)

290 Introduction to World Musics (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. (AH)

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.) (WC)

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. Writing-emphasis course. Prereq: Consent of instructor.

380 Music in World Cultures (3) Examines music from an ethnomusicalogical 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. (WC)

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. (WC)

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 individuals 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. Maximum 15 hours.

NUCLEAR ENGINEERING (716)

200 Introduction to Nuclear and Radiological Engineering (1) Topics related to nuclear and radiological engineering. Satisfactory/No Credit grading only.


301 Fundamentals of Nuclear and Radiological Engineering (3) Nuclear systems, radiation interactions and decay, health physics, cross sections, basic nuclear reactor theory concepts, introduction to FORTRAN programming. Prereq: Physics 232, Mathematics 231.

304 Nuclear and Radiological Engineering Laboratory I (3) Radiation detection and counting instrumentation, counting statistics, half-life and decay schemes, gamma spectrometry, heat transfer experiments. Prereq: 342. Coreq: 470. (WC)

342 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. (OC)

403 Nuclear and Radiological Engineering Laboratory II (3) Cross section measurements, diffusion properties of neutrons, shielding, dynamics and controls, alpha and beta spectroscopy, radiation fields and dosimetry. Prereq: 304. (WC)

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.

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.

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 Chemical Engineering 483; Industrial Engineering 483; Mechanical Engineering 483.)

484 Introduction to Maintainability 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 Chemical Engineering 484; Industrial Engineering 484; Materials Science and Engineering 484; Mechanical Engineering 484.)

494 Special Topics in Nuclear Engineering (3) Problems related to recent developments and practice. Prereq: Senior standing, consent of instructor. May be repeated.

495 Special Topics in Radiological Engineering (3) Problems related to recent developments and practice. Prereq: Senior standing on consent of instructor. May be repeated.

498 Research (1-3) Research related to recent developments in nuclear and radiological engineering. Prereq: Consent of department head. Satisfactory/No Credit grading only. May be repeated. Maximum 3 hours.

NUCLEAR MEDICINE TECHNOLOGY (718)

Courses 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 curricular section of this catalog, and who have been admitted to the Nuclear Medical Technology Program at UTMCK.

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 nuclear 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 an 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 function and maintenance requirements of nuclear instrumentation, radiation safety practices, and statistical analysis of quality control data.

422 Radiopharmacy (2) Emphasis on basic chemistry and radiochemistry in nuclear radiopharmacy. Topics include radiopharmaceutical preparation and quality assurance, radionuclide 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-chronic 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 methodologies. I—Patient care, central nervous system, endocrine system, respiratory system and digestive system; II—Cardiovascular and hepato-biliary 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, radionuclide 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 (4,4,4) Clinical instruction in routine nuclear medicine procedures conducted at UTMCK and other clinical sites. Clinical instruction activities in imaging, instrumentation, radiotherapy, dose administration, radiation safety and protection, non-imaging procedures, 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, 400, 402, 406, and 480 are restricted to students who have progressed into the major.

201 Introduction to Nursing (2) 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 University of Tennessee undergraduate students.

305 Transitions to Professional Nursing (4) 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. 3 lecture and 1 lab. For RNS only.

311 Foundations of Professional Nursing Practice (5) Emphasis on patient centered communication, 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 and 3 lab. Prereq: 201. Coreq: 319, 333, 341.

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 and 1 lab.
341 Transcultural Nursing (2) Focus on cultural perspectives in health and illness. Discussion of diversity in and influence of culture on health promotion, maintenance, and restoration across the lifespan and in selected nursing specialties, ethnic populations, and religious denominations.

351 Pharmacology I (2) Biochemical and pharmacological effects of therapeutic drugs on the human body. Basic concepts of drug action and interactions. Major drug classifications. Prereq: Chemistry 100-110, and at least 6 semester hours of Anatomy and Physiology.

361 Health Maintenance and Restoration: Adult (5) Focus on health maintenance and restoration of adults experiencing commonly occurring acute or chronic illness. Presentation of illnesses and critical indicators of underlying conditions will be identified for the younger adult as compared to the older adult. 3 lecture and 2 lab. Prereq: 311, 319, 333.

381 Professional Development in Nursing (2) Emphasis on development of personal attributes necessary for professional practice such as: emotional intelligence, caring, critical thinking, decision making, problem solving, motivation and management of time, stress, and anger. The course content also includes theories and principles of interpersonal capacities and strategies used in any health care setting such as communication, delegation, and management of teams, conflicts, and changes. Prereq: 311, 341.

382 Health Promotion and Maintenance in the Community (5) Focus on nursing care of at-risk populations in the community and national health promotion objectives. Analysis of community health needs. Design and implementation of nursing interventions to promote and maintain health. 3 lecture and 2 lab. Prereq: 311, 319, 333. Coreq: 351, 361.

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. Volunteer community service, a service learning component, is required. Open to undergraduate students in all colleges.

402 Gerontology Practicum (3) Off-campus supervised experience in gerontology. Offered as part of the gerontology minor. Open to students in all colleges. Prereq: Consent of instructor.

403 Health Promotion and Maintenance in Childbearing 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. (WC)

404 Health Promotion, Maintenance, and Restoration in Children, Adolescents, and Their Families (5) A family-centered approach to the nursing care of children and adolescents. The nursing process is used as the basis for promoting, maintaining, and restoring health and facilitating adaptation in the child-rearing family. Clinical experiences in selected agencies provide experience with children and adolescents in both community and acute care facilities. 2 lecture and 3 lab.

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.

409 Genetic Disorders, Vulnerable Families, and Health Advocacy (3) Examination of health and social implications of Human Genome Project, with emphasis on genetic disorders that result in chronic illness or disability. Strategies for building collaborative partnerships to effect health advocacy for vulnerable populations. Prereq: Upper-division status.

415 Family/Community Health Nursing (6) Application of the nursing process to individuals, families, groups in the childbearing/rearing 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 (5) 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. 3 lecture and 2 lab. Prereq: all required 300-level nursing courses or RN status.

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. Prereq/Coreq: 432. For RN master’s entry students only.

451 Interpersonal Management Skills in Nursing (2) Focus on concepts and strategies for leadership as a professional nurse. Application of common workplace issues that affect nursing practice. Prereq: 381, senior.

452 Professional and Workplace Issues (1) Focus on nursing ethics and moral development, using scenarios from everyday practice. Prereq: 451.

454 Professional Leadership Issues (2) For Registered Nurses (RN) and Masters-Equivalent Students (M.S.E.S.). Survey of issues and trends that influence the practice of professional nursing. Focus on concepts and strategies for leadership as a professional nurse. Emphasis on personal development and interpersonal skills. (OC)


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 I (3) Provides opportunity for nursing students and/or registered nurses to develop beginning knowledge and 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 and 1 lab. Prereq: Upper-division or RN status or consent of instructor.

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. 1 lecture and 3 lab. Prereq: 406, 451. Coreq: Graduation term.

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 through life cycle; international nutrition concerns and/or issues. A student who has received credit for Nutrition 300 may not receive credit for this course. (NS)

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 academic, registration, and experience requirements.

300 Fundamentals of Nutrition (3) Nutrition in normal and altered health states during life cycle; nutritional analysis of diets. Prereq: Chemistry 110 or 130. Prereq/Coreq: Biochemistry and Cellular and Molecular Biology 230. A student 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 or 300, Biochemistry and Cellular and Molecular Biology 230.

303 Foodservice Systems Management (3) Assessment of managerial, organizational and operational structures in foodservice systems with focus on markets related to dietary practice; human resource policies and strategies applied to foodservice systems management.

310 Physiological Chemistry (4) (See Biochemistry and Cellular and Molecular Biology 310.)

313 Vitamins and Minerals (3) Functional properties and interrelationships among vitamins and minerals as they apply to human nutrition. Prereq: 310; Chemistry 350.

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; Chemistry 350.
410 Professional Issues in Dietetics (1) Dietetic registration, licensure; third party payments; dietetic practice; marketing dietetics; internship application preparation; public policy in dietetic practice. Prerequisite: 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. Prerequisite: 302, 415. (WC)

415 Clinical Nutrition I (3) Pathophysiological basis and nutritional assessment and intervention in chronic diseases in humans. Prerequisite: 313, 314.

416 Clinical Nutrition II (3) Pathophysiological basis and nutritional assessment and intervention in acute disease and other critical care conditions. Prerequisite: 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 in nutrition research. Prerequisite: 100 or 300, 310.

450 Special Topics: Nutrition (1-3) Developments, issues and problems in Nutrition; topics variable. Prerequisite: Junior or Senior standing in Nutrition or consent of instructor. May be repeated. Maximum 3 hours.

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) Prerequisite: Junior or Senior standing, consent of instructor. Satisfactory/No Credit grading only.

493 Directed Study: Nutrition (1-3) Individual student: faculty experience. Letter grade only.

OPERATIONS AND MANAGEMENT SCIENCE (738)

341 Operations Management I (3) Design of operations systems. Process and methods analysis and measurement, location and layout, project management, operational forecasting. Prerequisite: Business Administration 341.

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. Prerequisite: Mathematics 123 and Statistics 201.

421 Total Quality Management (3) Successful quality improvements characterized by four main principles: customer focus, continuous improvement, leadership, and teamwork. This course focuses on the managerial perspective that is necessary to successfully implement and integrate quality improvements initiatives. The quality improvement tools are also presented. Prerequisite: Business Administration 341.

441 Operations Management II (3) Planning and control of operations systems. Aggregate planning, scheduling systems, materials management. Prerequisite: 341.

PERSIAN (744)

161-162 Elementary Persian I, II (4,4) (See Asian Studies 161-162.)

261-262 Intermediate Persian I, II (4,4) (See Asian Studies 261-262.) (CC)

PHILOSOPHY (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. (AH)

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. (AH)

117 Honors: Introduction to Philosophy I (3) Honors version of Philosophy 110. Permission of the department is required. The course may not be taken before 118. (AH)

118 Honors: Introduction to Philosophy II (3) Honors version of Philosophy 111. Permission of the department is required. The course may be taken before 117. (AH)

130 Critical Thinking (3) An introduction to practical reasoning in natural language, designed to enhance skills in recognizing, analyzing, evaluating and constructing arguments.

135 Formal Logic (3) Introduction to formal deductive systems: propositional and predicate logic.

200 Special Topics (3) When content varies, may be repeated. Maximum 6 hours.

241 Engineering Ethics (3) Ethical issues in engineering at the intersection of science, business, and society. Such topics as international concerns, risk, safety, and the environment; employee loyalties and professional responsibility; professional organizations and codes of conduct. Writing-emphasis course. (AH) (WC)

242 Contemporary Moral Issues (3) Issues such as euthanasia, capital punishment, reproductive technologies, sexual ethics, diversity, war, world poverty, employment practices, and the environment, in light of philosophical analysis and ethical theory. Writing-emphasis course. (AH)

243 Business Ethics (3) The proper roles of ethics in business in general and such specific issues as the meaning and value of work; employee rights and responsibilities; marketing; finance; the environment; information technology; diversity and discrimination; international business; economic globalization; ethical business cultures. Readings will include philosophical essays and contemporary case studies. Writing-emphasis course. (AH) (WC)

244 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 244; Religious Studies 244.) (AH) (OC)

245 Environmental Ethics (3) Issues concerning the nature of the environment and the place of humanity within it. Writing-emphasis course. (AH)

246 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 246.) (AH) (WC)

290 Social and Political Philosophy (3) Issues such as the obligation to obey the law, liberty, oppression, equality, rights, democracy, and the just society. Writing-emphasis course. (AH) (WC)

300 Special Topics (3) May be repeated. Maximum 6 hours.

320 Ancient Western Philosophy (3) Writing-emphasis course. (WC)

322 Medieval Philosophy (3) Development of medieval thought from St. Augustine to William of Occam. Secondary and primary sources. Writing-emphasis course. (Same as Judaic Studies 322; Medieval Studies 322.) (WC)

324 17th- and 18th-Century Philosophy (3) Writing-emphasis course. (WC)

326 19th- and 20th-Century Philosophy (3) Writing-emphasis course. (WC)

340 Ethics (3) Theories of ethical values. Writing-emphasis course. (WC)

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) (See Religious Studies 374.)

376 Buddhist Philosophy and Religion (3) (See Religious Studies 376.)

379 Religion and Philosophy in China (3) (See 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.) (WC)

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. (WC)
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.)

393 Global Justice and Human Rights (3) Such issues as justice between distinct and diverse political communities; universal human rights; moral issues in environment, trade, and development. Writing-emphasis course. (Same as Global Studies 393; Legal Studies 393.)

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) (See Religious Studies 411.)

419 Science as Method (3) (See Ecology and Evolutionary Biology 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: 135 or consent of instructor.

440 Contemporary Ethical Theory (3) Topics in meta-ethics or ethics. Prereq: 6 hours of philosophy or consent of instructor.

443 Advanced Business Ethics (3) Advanced topics in business ethics. When content varies, may be repeated. Maximum 6 hours.

445 Advanced Environmental Ethics (3) Advanced topics in environmental ethics. When content varies, may be repeated. Maximum 6 hours.

446 Advanced Bioethics (3) Advanced topics in bioethics. When content varies, may be repeated. Maximum 6 hours.

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.

491 Foreign Study (1-15)

492 Off-Campus Study (1-15)

493 Independent Study (1-15)

**PHYSICAL EDUCATION (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.

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 jiu jitsu, 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 Softball (1) Introduction to individual and team fundamentals, rules, and strategy.

235 Social Dance (2) Popular ballroom dance forms such as the swing (shag), foxtrot, cha cha, tango and rumba.

236 Advanced Social Dance (2) Popular ballroom dance forms such as the swing (shag), foxtrot, cha cha, tango and rumba.

240 Intermediate Swimming (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.

241 Softball (1) Introduction to individual and team fundamentals, rules, and strategy.

242 Weight Training (1) Introduction to the principles of strength development for large muscle groups through the use of free weights and machines.

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.

247 Tennis II (1) Development of accuracy and improved technique of ground strokes and serve; introduction to smash, spin serve, and advanced strategy.

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 course for the non-swimmer. Satisfactory/No Credit grading only.

256 Lifeguarding Training (2) American Red Cross lifeguarding and aquatic management techniques. ARC certification. Prereq: Swim test second day of class.

258 Snow Sking (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.

261 Scuba Diving (2) Introduction and developmental SCUBA diving skills as well as the theory, safety skills and practical application of skills to open water SCUBA diving.

262 Snowboarding (1) Develop skills necessary for proper balance and control in snowboarding. Learn and demonstrate rules and regulations of snow etiquette through group participation. Learn the snowboarding responsibility code. Satisfactory/No Credit grading only.
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. (NS)

135-136 Introduction to Physics for Physical Science and Mathematics Majors (4,4) A one year course in Calculus based physics. Satisfies prerequisite for 200-level and beyond. Optional to honors physics 137-138 for physics majors. 3 hours lecture and 2 hours lab. Coreq: Mathematics 141-142. (NS)

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. (NS)

161 Elements of Physics for Architects and Interior Design Students (3) Chosen topics in physics for architecture and interior design students. Course emphasizes materials and building development by logic and lecture demonstrations. Prereq: Intermediate Algebra and one year of geometry. (NS)

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 and 3 hours lab. Prereq: Mathematics 130 or Calculus. (NS)

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. 2 hours lecture and 3 hours lab/recitation. Prereq: Engineering Fundamentals 102; Coreq: Mathematics 142. (NS)

232 Fundamentals of Physics: Wave Motion, Optics, and Modern Physics (4) Continuation of 231. Required of all engineering students. 3 hours lecture and 3 hours lab/recitation. 3 hours lecture and 3 hours lab/recitation. Prereq: 231. Coreq: Mathematics 241. (NS)

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 topics 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. 6 hours lab per week. Prereq: 136 or 138 or 232.

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 combining 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. 3 hours lecture and 3 hours lab. Prereq: 431 or 136 or 138 or 232 and consent of instructor.

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. 6 hours lab per week. 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.

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. May be repeated with consent of department. Maximum 6 hours.

PLANT SCIENCES (791)

120 Introduction to Plant Sciences (2) Survey of the disciplines and professions addressed by the department’s four academic undergraduate concentrations: landscape design and construction; turfgrass science and management; public horticulture; plant science, biotechnology and horticulture. For departmental majors: enrollment is restricted to freshmen and transfer sophomores. Open to all non-majors.

210 Horticulture: Principles and Practices (2) An introduction to the biology and technology underlying the use and production of horticultural crops and landscape plants. Structure, growth and development of horticultural plants from a practical and scientific approach, environmental effects, basic principles of propagation, greenhouse and outdoor production, nutrition, pruning and chemical control of growth, pest control and branches of horticulture. Prereq: Biology 111 and 112.

220 Basic Landscape Plants (3) Identification, classification, adaptation, culture and landscape design uses of basic ornamental trees, shrubs, and vines. 2 hours and 1 lab. Prereq: Biology 111 and 112.

226 Public Horticulture (2) Study of the public horticulture profession. Attention given to the diversity of public horticulture institutions, career opportunities, and research. Discussion of current topics and issues. Prereq: 120.

230 Interior Plantscaping (3) History and introduction of the interior plantscaping industry. Identification, culture, propagation, and use of plants for the commercial interior plantscape. Management of the interior environment including light, humidity, growing media, insects, and diseases. Commercial use of containers, planters, water features, and artificial plants. Prereq: 120.

240 Turfgrass Management (2) Practical turfgrass management; cultivar selection, identification, and establishment; basic fertility programs, mowing, irrigation practices, and thatch removal and compaction control; pest identification and basic controls. 2 hours lecture. Prereq: Environmental and Soil Sciences 210; Biology 111 and 112.

241 Turfgrass Management Lab (1) Laboratory addressing topics presented in 240. 2-hour lab. Prereq: Environmental and Soil Sciences 210; Biology 111 and 112. Coreq: 240.
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 design theory with an emphasis on residential landscape planning. Introduction to landform, landscape materials, and planting design. 1 hour and 2 labs.

290 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: 120.

291 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: 120.


329 Horticultural Interpretation: Educational Programming for Adults and Children (1) Strategic planning, programming and budgeting for adult and youth education within a public garden. Prereq: 226.

330 Plant Propagation (2) Physiology, methodology, and environmental requirements for propagation. 2 hours and 1 lab. Prereq: Biology 111 and 112.

331 Interpreting Research Findings (1) Basic statistical concepts required for understanding and evaluating research findings. Prereq: Two mathematics courses.

335 World Food and Fiber Plant Production (3) Introduction to important world crops and production systems. Emphasis on plant terminology, origin and development, world agro-ecosystems, environmental and economic sustainability, current technology in crop production. Prereq: Biology 111-112 or 101-102 or 130-140.

341 Integrated Turfgrass Management and Environmental Benefits (2) Utilization of resources available to the turfgrass manager (e.g., extension, research, professional associations). Benefits of turfgrass in the environment, including bioremediation, urban greening, carbon sequestration. Prereq: 240.

343 Turfgrass Entomology (1) Biological study and collection of arthropods that challenge maintenance of healthy grasses, turf, and sod. Review and discussion of sampling/monitoring strategies and decision-making guidelines to help manage turfgrass pests. Prereq: 240.

348 Landscape Plant Physiology (2) Physiological principles as they relate to landscape design and construction, turfgrass management, and public horticulture: photosynthesis and transpiration, respiration, water and hormonal relations, mineral nutrition, plant development, and response to the environment. Prereq: Biology 111 and 112.

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. 2 hours and 1 lab. Prereq: 280.

353 Plant Genetics, Breeding, and Biotechnology (3) Genetic principles and techniques used in plant modification. Principles of molecular, transmission, and quantitative genetics as applied to plant breeding. Prereq: Biology 111 and 112.

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 design drawings and specifications. Two 3-hour labs. Prereq: 350.

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.


421 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 University of Tennessee Environmental Landscape Design Lab. They include local schoolyard habitats, greenways, wetlands, streambanks, and shorelines. Prereq: 220 or Ecology and Evolutionary Biology 330.

427 Management and Administration of Public Horticulture Institutions (2) Management of resources in non-profit institutions, support organizations and communities. Theoretical framework and institutional mission; strategic planning and programming; financial accounting and budgeting; development and fund raising; 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: 226.

429 Field Study of Public Horticulture Institutions (2) Extended 10-12 day field study of various public horticulture institutions such as botanical gardens, arboretas, historical gardens, zoos, conservatories, cemeteries, and nature preserves. Application and travel fee required. Prereq: 226.

430 Greenhouse Management (3) Principles of greenhouse operation and management for commercial crop production. 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. 2 hours lecture and one 2-hour lab. Prereq: Agriculture and Natural Resources 290 or Computer Sciences 100 or equivalent.

432 Weed Management (3) Principles of weed interference, integrated management, herbicide selectivity and behavior, specific recommendations for various crop and non-crop situations. 2 hours and 1 lab. Prereq: Environmental and Soil Sciences 210. Students who have received credit for 334 may not receive credit for 432.

434 Fruit and Vegetable Crops (3) Botanical description, geographical distribution, general cultural practices of warm and cool season vegetables, small fruits, and deciduous tree fruits. A Saturday field trip is required. 2 hours lecture and one 2-hour lab. Prereq: 120, Biology 111 and 112.

435 Field and Forage Crops (2) Agronomic principles of crop production and management. Crop improvement, cropping systems, tillage, fertilization, pest management, harvest and utilization of major field and forage crops. 2 hours and 1 lab. Prereq: 335.

436 Plant and Garden Photography (2) Principles and techniques of photography as they relate to plants and gardens. Study of equipment options and field shooting under various weather conditions and in different seasons. Prereq: Senior standing and consent of the instructor.

437 Public Garden Operations and Management (2) 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 Agriculture Gardens as a model. Prereq: 226.

441 Advanced Turfgrass Management (2) Principles and scientific basis of turfgrass culture; adaptation, ecology, physiology, climatic influences on grass culture; clipping and water management; design. 1-hour lecture and one 1-hour lab. Prereq: 240.


446 Horticultural Therapy (2) Introduction to the application of horticulture as therapy for treatment, rehabilitation and/or training of individuals with disabilities. Prereq: Senior standing.

448 Horticultural Internet Technology (3) Creation and management of information resources for the internet, with a focus on development of visual and oral communications skills through a series of individual and team exercises in writing, graphics and public speaking. Prereq: Communication Studies 210 or 240, and senior standing. (WIC)
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) (See Entomology and Plant Pathology 451.)

454 Plant Biotechniques (3) Lectures will discuss recombinant DNA technology, molecular assisted breeding of economically important crops, gene cloning and transformation technologies. Examples will be given of food and ornamental crops, pharmaceuticals, and renewable energy sources produced using biotechnology as well as potential risks of this technology. Labs will include electrophoresis, tissue culture, plasmid prep., genomic DNA prep., PCR, plant transformation, genomic techniques. 1 hour and one 3-hour lab. Prereq: 353 or Biology 240.

457 Weed Management (2) 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.


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. 2 hours. Prereq: 350.

461 Statistics for Biological Research (3) Application of statistics to interpretation of biological research. Notation, descriptive statistics, probability, distributions, confidence intervals, t- and chi-square tests, analysis of variance, mean separation procedures, linear regression and correlation. Students may not receive credit for both 461 and 561. Prereq: Mathematics 125 or 152.

470 Professional Practices for the Green Industry (3) Professionalism, sales, sales proposals, budgeting, managerial skills, estimating, specifications, and contract management in the turf, public horticulture and plantscaping professions. Prereq: Two 300-level or 400-level Plant Sciences courses.

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. Two 3-hour labs. Prereq: 280, 380.

485 Computer Aided Landscape Design (3) Overview of Computer Aided Design (CADD) as it relates to landscape design and construction. Emphasis on development of landscape design drawings through utilization of LANDCAD software. Prereq: 280, 380, and Agriculture and Natural Resources 290 or Computer Science 100 or equivalent.

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 hours. Satisfactory/No Credit grading only.

493 Problems in Horticultural and Plant Sciences (1-3) Supervised individual problems relating to the plant sciences or landscape design. May be repeated. Maximum of 6 hours.

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, Computer Science 100 or equivalent, and senior standing.

497 Undergraduate Research Participation (1-3) Experiences in active research projects under supervision of staff members. Student should make arrangements for research project with instructor prior to enrollment. Prereq: Junior or senior standing, minimum grade point average 3.00 and consent of instructor. May be repeated. Maximum 6 hours.

**POLITICAL SCIENCE (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 emphasizing government in a cross-national and global perspective. Focus on the knowledge and principal concerns of political science as a social science. (SS)

107 Honors: United States Government and Politics (3) Analysis and exploration of the American political system for students with superior ability. In order to enroll: (1) current students must have a cumulative GPA of 3.25 or higher; (2) incoming students must have either a 29 ACT composite or 1250 SAT composite.

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 and 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; 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.

321 Urban Politics and Process (3) Development of politics and policy-making in the modern American city. (Same as Urban Studies 321.)

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. Writing-emphasis course. (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.

341 Judicial Process (3) Courts as components of political systems, and public policy making through judicial decision making. (Same as Legal Studies 341.)

350 Political Change in Developing Areas (3) Characteristics and problems of political changes 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. Writing-emphasis course.

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.)

402 The City in the United States (3) Development and character of U.S. cities. Contemporary issues and selected case studies (Same as Urban Studies 411.)
403 Survey of Planning (3) History of city development and of planning. U.S. experience in urban and other levels of planning. State of the art process, comprehensive plan, implementation devices. Planning issues in society. Not for credit for MSP degree. (Same as Urban Studies 412.)

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.

425 Media and Politics (3) Examines the interrelationship between the political system and the media from a political science perspective.

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 the criminal 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 reform measures and their effectiveness.

442 Administrative Law (3) Legal dimensions of administrative power and procedures, and constitutional controls over administrators. (Same as Legal Studies 442.)

445 Administration of Justice (3) Administration and processes of justice system, including judicial administration and decision making in trial and appellate courts. (Same as Legal Studies 445.)

446 Housing (3) Nature and demand for housing in the 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 increase supply and quality of housing. (Same as Urban Studies 446.)

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) Diplomacy, 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.

491 Foreign Study (1-15) Prereq: Consent of department. May be repeated. Maximum 15 hours.

492 Off-Campus Study (1-15) Prereq: Consent of department. May be repeated. Maximum 15 hours.

493 Independent Study (1-15) Prereq: Consent of instructor. May be repeated. Maximum 15 hours.

494 Internship (1-6) Prereq: Consent of department. May not be counted toward requirements for the political science major. May be repeated. Maximum 6 hours. Satisfactory/No Credit grading only.

PORTUGESE (811)

111-112 Elementary Portuguese (3,3) Introduction to Portuguese. Must be taken in sequence. Language laboratory required.

199 Portuguese 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 concentration. See the director for further information.

211-212 Intermediate Portuguese (3,3) Stresses reading, writing, listening, and speaking of Portuguese to prepare for upper-division courses in the language. Must be taken in sequence. Language laboratory required. Prereq: 112 or equivalent. (CC)

301-302 Literature, Culture, and Civilization of the Portuguese-Speaking World (3,3) A course for students who have completed the intermediate sequence of Portuguese and wish to enhance their knowledge of language and culture through the medium of literature. Taught in Portuguese. Prereq: 212, 400, or the equivalent.

309 Intermediate Conversation and Composition (3) Designed to improve proficiency in oral and written communication in Portuguese. Prereq: 212, 400, or the equivalent.

315 Aspects of Luso-Brazilian Literature (3) Selected writers, trends, and artistic movements set against a broad background of cultural, socio-political and historical developments. Prereq: 212 or consent of instructor. Writing-emphasis course. May be repeated if topic differs. Maximum 6 hours. (Same as Latin American Studies 315.)

316 Luso-Brazilian Cinema and Literature (3) A study of original feature films as well as literary works translated into English and adapted into film. The objectives of the course are to achieve a better understanding of contemporary Luso-Brazilian culture and issues through the medium of literature and cinema. Available for both majors and non-majors. Films will be shown in Portuguese with English subtitles. Writing-emphasis course. (Same as Cinema Studies 316; Latin American Studies 316.)

400 Portuguese for Speakers of Another Romance Language (3) Accelerated class for beginning students of Portuguese with a strong background in another Romance language. Introduction to grammar, reading and culture of Portugal and Brazil. Prereq: Three hours at 300-level in another Romance language or equivalent.

409 Advanced Conversation and Composition (3) Informal and structured conversation on contemporary topics (business, politics, economics, religion, an culture) and formal writing practice at an advanced level. Prereq: 309 or equivalent.
431-432 Topics in the Literature and Language of the Portuguese-speaking World (3,3) Outstanding works of literature and culture from the countries where Portuguese is spoken. Topics may vary. Prereq: At least one course at the 300-level or the equivalent. May be repeated. Maximum 12 hours. (Same as Latin American Studies 431-432.)

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)

493 Independent Study (1-15)

**PSYCHOLOGY (830)**

110 General Psychology (3) Introduction to primary approaches to the study of human behavior and experience. (SS)

117 Honors: General Psychology (3) Open to University Honors Students and to students with ACTs of 29 or higher (or SAT equivalent). Prereq: Consent of instructor. (SS)

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 analyses 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. May be repeated. Maximum 15 hours. Satisfactory/No Credit grading only.

370 Ethology and Sociobiology (3) (See 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. Maximum 9 hours.

385 Statistics in Psychology (3) Descriptive statistics; logic of hypothesis-testing and statistical inference. Basic parametric and nonparametric tests.

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, 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 concept-formation. 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, 385 or Mathematics 115 or Statistics 201 or graduate standing.

415 Psychology of Religion (3) History of the psychology of religion with an examination of various philosophical and empirical orientations. Exploration of the psychological function of religion for individuals and society. Prereq: 110, 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, 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, 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. Prereq: 110, 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. Prereq: 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. Prereq: 110, 360, 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. Prereq: 110, Psychology 385 or Mathematics 115 or Statistics 201 and junior standing (60 semester hours) or consent of instructor.


450 Comparative Animal Behavior (3) (See Ecology and Evolutionary Biology 450.)

459 Comparative Animal Behavior Laboratory (3) (See Ecology and Evolutionary Biology 459.)

461 Physiological Psychology (3) Nervous system and physiological correlates of behavior. Biological basis of emotion, learning, memory and stress. Prereq: 110 and Junior standing (60 semester hours) or consent of instructor. One of the following 3 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. Prereq: Consent of instructor. Satisfactory/No Credit grading only.

470 Theories of Personality (3) Major theories of human personality and their development. Prereq: 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. Prereq: 110 and Junior standing (60 semester hours) or consent of instructor.

480 Theories of Learning (3) Classical and current approaches to learning and cognition. Prereq: 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. Prereq: 110 and junior standing (60 semester hours) or consent of instructor. No more than 6 hours of Psychology 382, 482 may count towards the major. An additional 6 hours of Psychology 382, 482 may count as electives. May be repeated.

489 Supervised Research (1-9) Prereq: Junior standing (60 semester hours) and consent of instructor. Any combination of 6 hours of 399, 489, 491, 492, or 493 may be used in the major. An additional 6 hours may be used as electives. May be repeated.

491 Foreign Study (1-15) Prereq: Junior standing (60 semester hours) and consent of instructor. Any combination of 6 hours of 399, 489, 491, 492, or 493 may be applied toward the major. An additional 6 hours may be used as electives. May be repeated.

492 Off-Campus Study (1-15) Prereq: Junior standing (60 semester hours) and consent of instructor. Maximum 12 hours in 399, 489, 492, and 493 may be applied toward major. An additional 6 hours of 399, 489, 491, 492, or 493 may be applied toward the major. An additional 6 hours may be used as electives. May be repeated.

493 Independent Study (1-15) Prereq: Junior standing (60 semester hours) and consent of instructor. Any combination of 6 hours of 399, 489, 491, 492, or 493 may be applied toward the 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. Writing-emphasis course. Prereq: Senior standing.

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 application of public health prevention and control initiatives throughout the disease cycle. Prereq: Ecology and Evolutionary Biology 230.

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) (See 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. Prereq: 300.

493 Directed Independent Study (1-3) Individual study of selected issues. Prereq: 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 public relations in management of 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 a lab setting. Prereq: 270, Advertising 310, Journalism and Electronic Media 200.

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. Prereq: 270, Advertising 310, 340.

380 Public Relations Professional Seminar (1) Exploration of career choices in mass communication. Resume and letter writing, interviewing, and portfolio preparation. Prereq: Progression as a major in the School of Advertising and Public Relations.

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. Prereq: 320, 370.

490 Special Topics (3) Topics vary. May be repeated. Maximum 6 hours.

491 Foreign Study (1-15) Advance approval of hours and topics by advisor required for registration. May be repeated. Maximum 15 hours.

492 Field Experience (1-2) Approved internships and other supervised practice in public relations. Prereq: 320, senior standing, and consent of instructor. May be repeated. Maximum 4 hours. Satisfactory/No Credit grading only.

493 Independent Study (3) May be repeated for maximum of 6 hours. Prereq: 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 basal readers. For BS Education students only. Prereq: 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. Prereq: Admission to Teacher Education Program.

434 Topics in Reading Education (1-6) May be repeated. Maximum 6 hours. Prereq: Admission to Teacher Education Program an 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 AND LEISURE STUDIES (853)

201 Foundations of Recreation and Leisure and Principles of Leadership (4) Introduction to the recreation and leisure profession focusing on understanding concepts, philosophy, career opportunities and professional practices in leisure service industries. The required lab focuses on the application and practice of theories of leadership.

290 Practicum in Recreation and Leisure Studies (2) Supervised practice in approved agencies offering programs in recreation and leisure services. Each hour of credit requires 50 clock hours of work. For majors only. Prereq: Minimum 2.3 GPA. 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 student’s area of interest. Prereq: 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. Prereq: 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 (humor, stress-management, self-responsibility, fitness) in the planning and delivery of therapeutic recreation service for individuals with disabilities. Prereq: Consent of instructor.

390 Practicum in Recreation and Leisure Studies (2) Supervised practice in approved agencies offering programs in recreation and leisure services. Each hour of credit requires 50 clock hours of work. Prereq: Minimum 2.3 GPA. For majors only. 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. Prereq: 201, 310, or Sport Management 350.

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 Services (3) Principles of administration applied to provision of leisure 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 Sport Management 250.

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 tourism and various sectors of the leisure industry. Use of resources, both natural and developed, 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) Required of all majors. Application of previous theoretical and applied knowledge and skills in an appropriate recreation/leisure setting. The internship is intended to simulate a full time (40 hours/week) professional level work experience during the entire semester. Therapeutic Recreation Internship must meet NCTRC national guidelines. Prereq: Completed of all core courses, senior standing/2.3 GPA and/or permission of instructor. 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. (CC)

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. (CC)

232 Varieties of Religious Community (3) How different forms of religious communities (sects, tribes, sects, monastic orders, denominations, familial, etc.) have sought to reject, reinforce, transform, ignore, or dominate their culture and society. (Same as Sociology 232.)

244 Professional Responsibility (3) (See Philosophy 244.) (AH) (OC)

246 Biotheology (3) (See Philosophy 246.) (AH) (WC)

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.)

311 Ancient Hebraic 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) (See History 315.)

320 Women and Religion (3) Concepts of gender in religious traditions, religious, 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 Judaic Studies 320; Women’s Studies 320.)


322 Christian Thought in Late Antiquity (3) Major themes, events, texts, and figures of Christianity in the Roman and Byzantine Empires (after the New Testament period). Includes the study of early Christian controversies over topics such as gender and sexuality, Christianity and politics, interpreting scripture, and defining Christian orthodoxy. Writing-emphasis course. (Same as History 322.)

326 Images of Jesus (3) Major portrayals of Jesus Christ from the first century to the twentieth within 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) 329—Readings in narrative material from the Hebrew Bible. 330—Readings in poetic and prophetic material from the Hebrew Bible. Prereq: 329 or consent of instructor.

332 Classical Islam (3) Content limited to events prior to 1773 CE, focussing on the Qur’an, the Prophetic Tradition, Islamic law, Sunnism, Shi’ism, and Sufism. Writing-emphasis course. (Same as Asian Studies 332.)

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 U.S. Writing-emphasis course. 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.

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 and 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 and 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. Writing-emphasis course. Prereq: 351 or consent of instructor. May be repeated. Maximum 6 hours. (Same as American Studies 355.)

370 Philosophy of Religion (3) (See 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 African and African-American Studies 373; Anthropology 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 renouncers 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. Writing-emphasis course. May be repeated. Maximum 6 credit hours. (Same as Judaic Studies 385.)

386 Voices of the Holocaust (3) Historical underpinnings of Nazi genocides such as that of the Jewish people, Gypsies, and homosexuals. The economic, religious, social, and philosophical trends supporting massive genocide. (Same as Judaic Studies 386.)

389 Literature of the English Bible (3) (See English 389.)

401 Texts and the Study of Texts (3) Systematic introduction to the nature and function of (primarily, but not exclusively, oral and written) texts and textual traditions in the study of religion. How texts are made and used historically, how they are recovered and created by scholars, how they are interpreted by religious communities and scholars.

405 Modern Jewish Thought (3) History, culture, and geography of the now Israeli portion of the Levant from 1850 to present. The founding of the modern state of Israel in 1948 and the political complexities of the Middle East. Israeli culture and literature. Writing-emphasis course. (Same as Judaic Studies 405.)

411 Modern Religious Philosophies (3) Religious implications of major Western thinkers and movements from Nicolas of Cusa to the nineteenth-century German Idealists. (Same as Philosophy 411.)

415 Psychology of Religion (3) (See Psychology 415.)

425 Seminar in Western Religions (3) Selected figures, themes, movements, and problems. Prereq: Consent of instructor. Variable content. May be repeated. Maximum 6 hours.

430 Seminar in American Religion (3) Selected figures, themes, movements, and problems. Prereq: Consent of instructor. Variable content. May be repeated. Maximum 6 hours.

440 Seminar in Comparative Religion (3) Selected figures, themes, movements, and problems. Prereq: Consent of instructor. Variable content. May be repeated. Maximum 6 hours.

474 Modern and Contemporary South Asian Religion (3) Religion in India during the Islamic and European colonial periods and in independent India. May include such topics as the development of vernacular forms of Hinduism; Hindu interactions with other religions; the Indian Freedom Movement and Gandhi; women and tradition; religion, secularism, and politics in independent India; and religion and caste in the new India. Writing-emphasis course. Prereq: Religious Studies 374 or Philosophy 374.

490 Readings and Research in Religious Studies (3) 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)

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.

RETAIL AND CONSUMER SCIENCES (865)

102 Microcomputer Applications (1) Introduction to microcomputer use and applications such as spreadsheets, databases, presentation graphics, and word processing. Emphasis on Excel and Powerpoint via in-class exercises and assignments. Satisfactory/No Credit grading. (Same as Hotel, Restaurant, and Tourism 102.)

210 Introduction to Retail Management (3) Development and overview of retailing, related businesses and industries, and the activities involved in the delivery of goods and services to the consumer.

310 Retail Buying (4) Analysis of the merchandise buying function within different types of retail organizations and structures. Application of principles associated with retail buying. Computer simulations. 5 hours and 1 discussion/lab. Prereq: 102 or equivalent, 210, Mathematics 125, Accounting 200.

311 Developing the Service Workforce (3) (See Hotel, Restaurant, and Tourism 311.)

320 Apparel Product Development (3) Concepts of apparel product development from the retailer’s perspective. Understanding of basic textile design principles, specification writing, line building, and brand management to develop apparel products for targeted markets.

341 Family and Consumer Behavior (3) Understanding of behavior of individual and family, demographics, family life cycle, family dynamics and roles, cultural and ethnic influences, and individual and family decision making.

346 Retail Operations Management (3) Analysis of retail operations in terms of organizational structure, logistics and distribution, growth opportunities and productivity. Prereq: 210, Accounting 200.

360 Issues and Trends in Consumer Service (3) Building competencies in providing outstanding customer service in retail organizations. This course will create a unified approach to customer service, recognizing the importance of store environment planning, organizational policies and internal marketing that will lead to increased business by attracting and retaining desired customers. Prereq: 210. (Same as Hotel, Restaurant, and Tourism 360.)

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: 341; Statistics 201; Marketing 300. Coreq: 310.

390 Professional Development (3) (See Hotel, Restaurant, and Tourism 390) (WC)

410 Strategic Retail Planning (3) Retail Management from a strategic planning perspective; development and implementation of retail strategy from financial, operational, and customer orientation. Prereq: 376, 422.

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, 341, Marketing 300, Accounting 200.
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, 341, 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, 341, 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, 341, Marketing 300.

422 Professional Experience in Retail and Consumer Sciences (6) Supervised educational experiences in selected retail and consumer sciences service operations. Prereq: Progression into the program and 310, 390.

480 Retail Market Planning and Execution (1-3). Expose students to the process of planning and executing a market trip; involves off-campus experience at a major market center. Prereq: 310, consent of instructor. May be repeated. Maximum 6 hours.

482 Professional Experience in Retailing II (6) Supervised professional experience in selected retail operations that build upon first professional experience. Prereq: 410, 422.

484 International Retail Industry Study Tour (3) Group study abroad involving academic research and field investigation. Prereq: 210 and consent of instructor. May be repeated. Maximum 6 hours.

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 SOCIETY (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.

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. (CC)

221 Rebels, Dreamers, and Fools: The Outcast in 19th Century Russian Literature (3) Texts in English translation. No foreign language credit. Writing-emphasis course. (AH) (WC)

222 Heaven or Hell: Utopias and Dystopias in 20th Century Russian Literature (3) Texts in English translation. No foreign language credit. Writing-emphasis course. (AH)

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.

425 Introduction to Descriptive Linguistics (3) (See French 423.)

426 Methods of Historical Linguistics (3) (See German 426.)

430 Selected Topics in Russian Literature (3) Writing-emphasis course. When content varies, may be repeated. Maximum 9 hours.

451-452 Senior Seminar (3,3) For majors in Russian; minors admitted at the discretion of the instructor. Intensive study of language, literary style, and literary criticism based on selected major novels.

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)

493 Independent Study (1-15)

SAFETY (890)

400 Directed Independent Study (1-3) Individual identification and study of safety or safety education problem/issue. Specific proposal must be made to instructor before registration. Prereq: Consent of instructor. May be repeated. Maximum 12 hours.

443 Sports and Recreational Safety (3) Accident prevention and injury control in sports activities; philosophy of sports safety; human environmental factors and interrelationship in sports injury and control; risk-taking and decision solution strategies; and contributions of sports medicine to safety. 3 hours and 2 labs.

452 Safety Principles and Practices (3) An introduction to the general principles, practices, and procedures in occupational and community safety. A survey of historical and present safety issues, problems, and practices addressing safety of individuals and groups in work-site, school, community, transportation, and industrial settings. Prereq: Junior/Senior standing or consent of instructor.

460 Fire Risk Management (3) Provides the knowledge and skills necessary to develop, implement, and manage a comprehensive fire safety program. Incorporates basic fire risk management concepts, interpretation of codes, and an exposure to basic fire analysis techniques. Prereq: Senior standing or permission of instructor.

SCIENCE EDUCATION (899)

496 Teaching Science Grades 7-12 (3) Methods, materials, recent trends in science and environmental education programs for secondary schools. Prereq: Admission to Teacher Education Program.

SOCIAL SCIENCE EDUCATION (900)

454 Teaching Strategies and Issues in Social Studies Education (3) Goals, objectives, techniques, materials, and evaluation; directed observation in public schools, preparation of teaching plans and materials; simulated teaching experiences. Prereq: Admission to Teacher Education Program.

SOCIAL WORK (905)

200 Introduction to Social Work (3) Emergence of the social work profession; professional mission; knowledge, skills, and values; practice settings; client groups; helping services; career patterns; practice methods. Designed to assist students to consider their ability for careers in social work.

250 Social Welfare (3) Development, structure and function of the social welfare institution. Analysis of social welfare programs and impact of the institution on society.


314 Human Behavior and the Social Environment (3) Interrelatedness of biological, social, cultural, environmental and psychological factors in human behavior. Person-in-environment over the life span with special attention to diversity, impact of racism, sexism, and other sociocultural factors. Integration of knowledge into a social work practice perspective. Prereq: Initial progression, English 101-102. Coreq. 312. (WC)

316 Culturally Responsive Social Work Practice (3) Social work practice with diverse populations. Variables including race, ethnicity, gender, class and sexual orientations as they relate to generalist social work practice. Students develop self-awareness of their own culture and the culture of others, acquire knowledge and understanding of the impact of oppression on diverse groups. Prereq: Initial progression. Coreq: 310, 313, 380.

380 Field Practice in Social Work I (3) Eight-hour-per-week, supervised field experience with practice situations for developing professional skills, values and attitudes. Concurrent seminar focuses on integration of knowledge with practice experiences. Prereq: Initial progression. Coreq: 310, 313, 316.

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.


450 Integrative Seminar (3) Social work content for entry-level professional practice and current issues influencing the profession. Includes development of a portfolio reflecting BSW competencies and research development and presentation. Prereq: Full progression. Coreq: 481.

461 Child Welfare Management I: History, Programs, and Policies (3) Study of the child welfare system examining history, policies and programs, both state and federal, pertinent to child maltreatment and juvenile justice. Prereq: 200 and 250 or permission of instructor.

462 Child Welfare II: Skills and Practice Methods (3) Emphasis on the special challenges, needed skills, and different strategies and interventions in the provision of culturally responsive child welfare services. Prereq: 461 or permission of instructor.

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.

SOCIOLGY (915)

110 Social Justice and Social Change (3) Problems of deviance, crime, and victimization, inequalities in exposure to environmental risks, and inequalities in power and participatory democracy within the context of social change. Assessment of control strategies and redress of injustices. (SS)

117 Honors: Social Justice 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. (SS)

120 General Sociology (3) Major concepts and theoretical approaches of sociology with emphasis on culture, socialization, social organization, and social stratification. (SS)

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. (SS)

232 Varieties of Religious Community (3) (See 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. (Same as Global Studies 250.) (CC)

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.

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.)


343 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 343; American Studies 343.)

344 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.

345 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.)

350 Criminology (3) Systematic inquiry into how crime is defined, measured and explained. Implications for criminal justice policy.

351 Juvenile Delinquency and Social Policy (3) This course examines the historical and contemporary nature and social contexts of juvenile delinquency, as well as theoretical explanations of and social reactions to delinquency in American society.

352 Deviance and Social Control (3) Deviants, their lifestyles, social organization, and social control.

360 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.

370 Social Psychology (3) Social psychological analysis of social behavior emphasizing its acquisition, its enactment, and its dynamic nature.

375 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.)

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.

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 coherence, 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 and institutions and programs such as the prison, probation, and parole. Analysis of their operation and impact. Prior completion of 350 is recommended. (Same as Legal Studies 451.)

452 Minorities, Crime, and Criminal Justice (3) Examines racial/ethnic disparities in criminal offending and victimization, as well as different experiences with law enforcement, judicial and correctional agencies. Emphasis on social justice.

453 Gender and Crime (3) Probes the gendered nature of offending, victimization and criminal justice. Examines the different experiences of males and females, and theories that attempt to explain these differences.

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 White-Collar Crime (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 growth, migration, distribution, and composition; population policy.

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 biophysical and social settings. Prereq: 110 or 120 or consent of instructor. Writing- emphasis course.

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.

495 Social Justice and Community Service (3) Examines social stratification, inequalities, and social justice. Service Learning component offers supervised internships in the community with service agencies and non-profit organizations. For sociology majors with senior standing. Instructor’s permission required.

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 and a placement score below the level required for admittance to Spanish 211. For elective credit only. 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.

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. (CC)

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 continuing emphasis upon speaking ability and with an introduction to reading literary selections. Prereq: 111-112 or permission. Students who earn an A or B in 218 receive credit for 300. (CC)

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. Prereq: 212 or equivalent or appropriate score on Spanish placement test. Available to non-native or non-bilingual students of Spanish only.

305 Conversation and Aural Comprehension (3) Develops speaking and listening comprehension skills through a variety of in-class and extra-class activities. Prereq: 212 or 218 or permission of department. Not available for credit for students whose level of proficiency in Spanish is superior as defined by the ACTFL Proficiency Guidelines.

323 Upper-level Grammar and Composition (3) Study of the more challenging grammatical issues in Spanish with practical application in composition assignments. Any review of basics covered in previous courses is to introduce finer points. Writing-emphasis course. Prereq: 218 or 300 or permission of department. Not available for credit for students whose level of proficiency in Spanish is superior as defined by the ACTFL Proficiency Guidelines.

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. Writing-emphasis course. Prereq: 323.

331 Introduction to Hispanic Culture (3) Introduction to the fundamental historical, political and demographic developments that led to the creation, geographic distribution 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. Writing-emphasis course. Prereq: 323. (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 Romantics, the realists of the 19th century, the Generation of ‘98, the avant-garde of the 1920’s and 1930’s, social realism, women writers, and contemporary developments. Writing-emphasis course. Prereq: 323, 330.

333 Survey of Spanish-American Literature: 1700-Present (3) Main writers, trends, stylistic periods and artistic movements in Spanish America since 1700 set against a broad background of cultural, socio-political and historical developments. Emphasis on Neo-classicism, the Romantics, modernismo, the avant-garde of the 1920s and 1930s, social realism, magical realism, the Latin American boom, women writers, and contemporary developments. Writing-emphasis course. Prereq: 323 and 330. (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. Writing-emphasis course. Prereq: 323, 330. (Same as Latin American Studies 334.)

345-346 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. 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, behavioral patterns, political parties, role of the military, the church, educational institutions, dictatorship and nationalism. Writing-emphasis course. Prereq: 6 hours of Latin American Studies courses or consent of instructor. (Same as Latin American Studies 401.)

402 Latin American Studies Seminar (3) Selected topics in Latin American Studies. Writing-emphasis course. Prereq: 6 hours of 300- or 400-level Latin American Studies courses or consent of the instructor. May be repeated. Maximum 6 hours. (Same as Latin American Studies 402.)

421 Phonetics (3) Prereq: 323 or permission of instructor.

422 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 English-Spanish translation. Emphasis on finer points of grammatical structures. Writing-emphasis course. Prereq: 323. Not available to native or bilingual students of Spanish without permission of department.
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 in-class and extra-class activities. Writing-emphasis course. Prereq: 323 or permission of department. Not available for credit for students whose level of proficiency in Spanish is superior as defined by the ACTFL Proficiency Guidelines.

425 Introduction to Descriptive Linguistics (3) (See French 425.)

426 Methods of Historical Linguistics (3) (See German 426.)

429 Romance Linguistics (3) (See French 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. Writing-emphasis course. Prereq: 323. May be repeated. Maximum 6 hours with permission of department. (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 as aesthetic value (the feminine symbolic), and feminist theoretical issues. Writing-emphasis course. Prereq: 323, 330, completion of major or minor requirements in 332, 333, 334.

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, social, and political implications of films and a comparison of them with treatments of related subjects in other types of artistic production. Writing-emphasis course. Prereq: 323, 330, completion of major or minor requirements in 332, 333, 334. Taught in Spanish. May be repeated. Maximum 6 hours with permission of department. (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 from 1900s to present as works of art and in light of political, cultural, and social contexts. Taught in English. 1 hour lecture, 2 hours screening, and 1 hour discussion. Not available for Spanish major or Spanish graduate credit. Graduate credit available for Latin American Studies and Cinema Studies. Writing-emphasis course. (Same as Cinema Studies 465; Latin American Studies 465.)

479 Disenchanted 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. Writing-emphasis course. Prereq: 323, 330, 331, completion of major or minor requirements in 332, 333, 334. May be repeated. Maximum 6 hours with permission of department. (Same as Latin American Studies 479.)

480 Social Forces in Hispanic Literary Expression (3) Analysis of major Hispanic texts that deal with issues of race and ethnicity in the Hispanic world, including literature itself. Writing-emphasis course. Prereq: 323, 330 and completion of major or minor requirements in 332, 333, 334. May be repeated. Maximum 6 hours with permission of department.

482 Trends in Hispanic Thought (3) Intellectual/philosophical currents represented in literary works, selected thinkers, or movements from historical periods of Spain and Latin American countries. Writing-emphasis course. Prereq: 323, 330, completion of major or minor requirements in 332, 333, 334. May be repeated. Maximum 6 hours with permission of department.

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; afrocentrism; issues of monarchy and empire; relationship between Jews, Christians and Muslims in Spain. Writing-emphasis course. Prereq: Spanish 323, 330 and completion of major or minor requirements in 332, 333, 334. May be repeated. Maximum 6 hours with permission of department.

486 Literary and Artistic Movements in the Hispanic World (3) Examination of relationships (thematic, 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. Writing-emphasis course. Prereq: 323, 330 and completion of major or minor requirements in 332, 333, 334. May be repeated. Maximum 6 hours with permission of department.

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 dealing with topics from the Middle Ages to the present day may be explored. Writing-emphasis course. Prereq: 323, 330, completion of major or minor requirements in 332, 333, 334. May be repeated. Maximum 6 hours with permission 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) Spanish Community Service Practicum (1) Supervised community service with local agencies that assist Hispanic community or supervised activities with local cultural organizations that promote awareness of Hispanic culture among the general public. Each credit hour requires 40 semester hours of off-campus supervised work and a weekly one-hour tutorial with a faculty member. Prereq: Completion of 18 hours of upper-division Spanish and consent of instructor. Not available for credit in the major. Maximum of one credit hour per semester. May be repeated. Maximum 3 hours. Satisfactory/No Credit grading only.

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, and current 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.

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.

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 Special Education Programs (3) Practicum in teaching special education programs: planning, developing, implementing and evaluating instruction. Prereq: 402, admission to Teacher Education Program. Coreq: 419 and/or 471. Satisfactory/No Credit grading 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. Satisfactory/No Credit grading 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.
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. May be repeated. Maximum 5 hours. Satisfactory/No Credit grading only.

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 I (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.

311 Coaching Football (1) Theoretical and practical application of various coaching techniques in football for the prospective secondary/college coach. Includes analysis and selection of appropriate game plans, specific conditioning and training programs, practice organization, player evaluation, scouting, individual and team offensive and defensive. Prereq: Consent of instructor.

312 Coaching Basketball (1) Individual and team fundamentals for the high school coach; conditioning, schedule making, and other business arrangements. Prereq: Consent of instructor.

313 Coaching Track and Field (1) Coaching methods and training techniques for various track and field events, including experience observing and working at meets and practices. Prereq: Consent of instructor.

315 Coaching Baseball/Sofball (1) Theoretical and practical application of various coaching techniques in baseball/softball for the secondary/college coach. Topics include analysis and selection of appropriate game plans, specific conditioning and training programs, practice organization, player evaluation, scouting, individual and team offensive and defensive strategies. Prereq: Consent of instructor.

330 Sport Communication (3) An introduction to the communications industry and its relationship with sport. Students will explore cultural issues, such as gender and ethnicity, and their relationship to sport and media. The course will also provide students opportunities to develop practical communication skills and learn how media and sport interact. Prereq: Progression to sport management.

350 Sport Management: Theory to Practice (3) Overview of managerial theories and applications including responsibilities and practices associated with broad perspectives of sport enterprise. Prereq: Progression to sport management.

360 Sport Governance (3) The primary focus is the organizational structure, authority and functions of governing bodies. Special emphasis is given to the role of the National Collegiate Athletic Association in collegiate athletics.

370 Event Management (3) Study of the various principles involved in the organization, promotion, and management of special events. Students will combine theory and practice through experience with assigned special events. Prereq: Progression to sport management or consent of instructor.

380 Special Topics (1-3) Study in selected disciplinary or professional areas of sport management. Prereq: Progression to sport management. May be repeated. Maximum 5 hours. Satisfactory/No Credit grading only.

440 Sport Marketing (3) Application of fundamental marketing concepts to the sport industry. Marketing research, promotions, fund raising, advertising, and assessment of marketing programs specific to sport will be covered. The historical development of sport marketing will be included. Prereq: Marketing 300 and progression to sport management.

450 Legal Aspects of Sport (3) Identification and application of various areas of law to sport industry. Includes how constitutional law, contract law, antitrust law, tort law impact sport management decisions. Special emphasis placed on discrimination in sport (e.g., race, gender, ethnicity, and disability). Prereq: Progression to sport management.

460 Development and Revenue Generation in Sport (3) Designed to provide overview of theories, strategies, 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.

490 Sport Management Internship (6-12) Supervised work experience at an approved site offering sport management opportunities. Emphasis on managerial tasks and administrative 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). Total 12 hours required. Satisfactory/No Credit grading only.

493 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.

SPORT STUDIES (959)

231 Introduction to Sport Psychology (3) Introduction to the psychology of sport and exercise. Includes the scientific study of people and their behaviors in these contexts and the practical application of that knowledge. Topics include: personality, motivation, anxiety, competition and cooperation, group and team dynamics, leadership, goal-setting, self-confidence, injury, moral and ethical considerations, and unhealthy behaviors.

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.

335 Socio-cultural Foundations of Sport and Leisure (3) An overview of the sociological, historical, and philosophical foundations of sport and leisure in American society. Various forms of sport and leisure are explored within a social justice framework based on a cultural studies perspective. Students explore sport and leisure as global phenomena in social, historical and philosophical contexts.

336 Social Issues in Sport (3) An exploration of power relations and cultural ideologies as they impact participation opportunities in sport. Students use in-depth critical thinking analysis to identify and explore social justice issues linked to the major spheres of social life. In addition, moral decision-making and ethical dilemmas in sport, leisure and exercise are addressed.

380 Special Topics (1-3) Study in selected disciplinary or professional areas of Physical Education. Prereq: Progression to the major. May be repeated.

391 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.

493 Directed Independent Studies (1-3) Independent study in a specialized area with physical education. Prereq: Consent of advisor and progression to the major. May be repeated. Maximum 9 hours.

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, two 50-minute lectures, and one 110-minute lab per week. (QR)


320 Regression and Correlation Methods (3) Simple linear regression and correlation analysis, time series analysis, multiple regression, variable selection, regression diagnostics, partial correlation, and categorical data analysis techniques. Use of statistical computing software. Applied course appropriate for a general audience. Prereq: 201 or 251.


367 Statistical Methods (3) Numerical and graphic description of data; probability and probability distributions; simulation; sampling distributions; estimation and hypothesis testing for one and two samples, parametric and nonparametric approaches, bootstrapping; tests for count data; simple and multiple linear regression, diagnostics and validation; analysis of variance. Uses SAS and other statistical software. Prereq: 320 or consent of instructor.


474 Introduction to Data Mining (3) Understanding and application of data mining methods. Data preparation; exploratory data analysis and visualization; cluster analysis; logistic regression; decision trees; neural networks; association rules; model assessment; and other topics. Applications to real world data. Use of standard computer packages. Prereq: 471 or consent of instructor.


483 Special Topics in Statistics (1-3) Topics vary. Prereq: Consent of instructor. May be repeated. Maximum 6 hours.


492 Internship (1-6) Supervised off-campus experience in application of statistical principles and methods in business, industry, or government, culminating in a written and oral report. Prereq: Permission of the chairperson of the Statistics Department Undergraduate Affairs Committee. May be repeated. Maximum 6 hours. Satisfactory/No Credit grading only.

493 Independent Study (2-6) Faculty directed reading and investigation of specified topic in probability or statistics culminating in a written report. Prereq: Two courses in statistics and permission of the chairperson of the Statistics Department Undergraduate Affairs Committee. May be repeated. Maximum 6 hours.

THEATRE (976)

100 Introduction to Theatre (3) Understanding theatre: thought, philosophy, aesthetics, and production practices. Writing-emphasis course. (AH)

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.

242 Fundamentals of Costume Design and Technology (2) Introduce the elements of costume design, technology and the design process. Hands on and lab intensive.

252 Fundamentals of Scene Design and Technology (2) Introduce the elements of scene design, basic scenic technology and the design process. Hands on and lab intensive.

262 Fundamentals of Lighting Design and Technology (2) Introduce the elements of theater lighting design, basic technology and the design process. Hands on and lab intensive. Writing-emphasis course.

300 Play Analysis (3) Study of methods and tools used in script analysis for the purpose of play production. Prereq: 100 or consent of instructor. (WC)


323 Stage Movement (3) Introduction to movement/kinesethetic awareness techniques and their application to performance. Prereq: 220, 221 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, 221 or consent of instructor.

340 Costume Design I (3) Development of research, rendering, and conceptualization skills.

345 Costume Construction (3) Techniques in the construction of costumes for the theatre. Prereq: 242 or consent of instructor.

352 Entertainment Technology I (3) Techniques in live entertainment production, including scenery techniques, structures, special effects and rigging. Prereq: 252 or consent of instructor.

355 Scenic Design I (3) Designing a set by combining the elements and principles of design composition with dramaturgical research.

362 Lighting Design I (3) In depth lighting design practice and principals. Project and lab intensive. Writing-emphasis course. Prereq: 262 or consent of instructor.

370 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: 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.

420 Special Studies in Acting (3) Content varies. Exercises in selected concentrated areas such as styles, techniques, approaches, e.g., Shakespeare, movement, humor. Prereq: 320 and consent of instructor. May be repeated. Maximum 9 hours.

421 Theatre Projects in International Theatre (3-5) Study and performance of foreign works. Content varies. Language skills required. Prereq: 320 and consent of instructor(s). May be repeated. Maximum 9 hours.

425 Selected Musical Theatre Techniques (3) Study and practice of musical theatre material including both dance and vocal work. May be repeated. Maximum 6 hours.


446 Costume Patterning (3) Draping patterns for period costumes. Includes corsetry and the study of historic patterns 1500-1900.

450 Special Studies in Entertainment Technology (1-3) Content varies. May be repeated. Maximum 9 hours. Prereq: consent of instructor.

452 Entertainment Technology II (3) Automation systems in live entertainment, including advanced rigging and flying for stage and film Prereq: 352 or consent of instructor.

454 Scenery Painting (2) Introduction to materials, techniques, and principles of the craft. Emphasis on gaining skill and understanding through studio experience. Prereq: Consent of instructor.

456 Scenic Design II (3) Advanced studies in set design. Prereq: 355 or consent of instructor.

461 Lighting Design II (3) Advanced lighting design theory and practice. Lab and project intensive. Prereq: 362 or consent of instructor.

464 Computer Aided Drafting for the Theatre (3) Introduction to entertainment drafting. Emphasis on 2D graphical standards, drafting techniques, drawing layout and presentation.

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 Experience 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.

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.

UNIVERSITY HONORS (983)

See University Honors Program for Honors by Contract information.

100 Introduction to University Honors (1) Required of and limited to freshmen students in the University Honors Program. Computer skills, service learning, study abroad options, professional development, and research skills. Satisfactory/No Credit grading only.

157 Arts and Humanities Honors Seminar (3) Interdisciplinary examination of selected issues in the arts and/or humanities. Topics vary. May be repeated if topic differs. Maximum 6 hours. (AH)

167 Social Science Honors Seminar (3) Interdisciplinary examination of selected issues in the social sciences. Topics vary. May be repeated if topic differs. Maximum 6 hours. (SS)

177 Cultures and Civilizations Honors Seminar (3) Interdisciplinary examination of selected global and cultural issues. Topics vary. May be repeated if topic differs. Maximum 6 hours. (CC)

187 Quantitative Reasoning Honors Seminar (3) Interdisciplinary applications of quantitative reasoning methods. Topics vary. May be repeated if topic differs. Maximum 6 hours. (QR)

257 Special Topics in the Arts and Humanities (3) Examination of a selected issue in the arts and/or humanities from a multi-disciplinary perspective. Topics vary. Prereq: English 118 or 102 or consent of University Honors. May be repeated if topic differs. Maximum 6 hours. (AH) (WC)

267 Special Topics in the Social Sciences (3) Examination of a selected issue in the social sciences from a multi-disciplinary perspective. Topics vary. Prereq: English 118 or 102, or consent of University Honors. May be repeated if topic differs. Maximum 6 hours. (SS) (WC)

277 Special Topics in Cultures and Civilizations (3) Examination of a selected global or cultural issue from a multi-disciplinary perspective. Topics vary. Prereq: English 118 or 102, or consent of University Honors. May be repeated if topic differs. Maximum 6 hours. (CC) (WC)

287 Special Topics in the Natural Sciences (3) Examination of a selected issue in the natural sciences from a multi-disciplinary perspective. Topics vary. May be repeated if topic differs. Maximum 6 hours.

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 if topic differs. Maximum 6 hours.

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 if topic differs. Maximum 6 hours.

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 if topic differs. Maximum 6 hours.

458 Senior Honors Seminar (1) Required of all University Honors students. Development and oral presentations of Senior Honors Projects. 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 (1-9) Open to any undergraduate honors student. Proposals must be approved in advance by University Honors. May be repeated. Maximum 9 hours. Letter grade only.

499 Senior Honors Project (3) Required of all University Honors students completing an equivalent senior project for an academic department or program. Substantial scholarly, scientific, or artistic endeavor representing the capstone of a student’s undergraduate education.

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. Permission of instructor required. Variable credit. May be repeated. Maximum 9 hours.

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. Permission of instructor required. May be repeated. Maximum 9 hours.

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. Permission of instructor required. May be repeated. Maximum 9 hours.

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.
140-420 Advanced Topics in University Studies (1-9, 1-9) 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 coursework and travel as a learning community during their time in the program. The course has three coordinated components: Values and Politics; 20th Century French Literature, Culture, and Language; and 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. Permission of instructor required. May be repeated. Maximum 9 hours.

491 Foreign Study (1-15)

492 Off-Campus Study (1-15)

493 Independent Study (1-15)

URBAN STUDIES (985)

200 Human-Environment Systems (3) (See 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.

321 Urban Politics and Process (3) (See Political Science 321.)

350 Practicum in Urban Studies (3) Introductory seminars, written assignments, and hands-on experience in an organization which is working for urban change.

411 The City in the United States (3) (See Political Science 402.)

412 Survey of Planning (3) (See Political Science 403.)

441 Urban Geography of the United States (3) (See Geography 441.)

442 Urban Social Geography (3) (See Geography 442.)

446 Housing (3) (See Political Science 446.)

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 concentration majors only. Prerequisite: Approval of department. Satisfactory/No Credit grading only.

454 Cities and Urban American History (3) (See History 454.)

460 Senior Seminar (3) A capstone seminar taught by an interdisciplinary team of urban studies faculty in a problem-solving context. Writing-emphasis course. Prerequisite: 250, 350, and senior standing.

464 Urban Ecology (3) (See Sociology 464.)

485 Real Estate and Investment Analysis (3) (See Finance 485.)

493 Independent Study (3-6) May be repeated. Maximum 6 hours.

WILDLIFE AND FISHERIES SCIENCE (993)

101 Current Topics in Wildlife Health (1) All aspects of wildlife health including current topics, emerging diseases, impact of diseases on wildlife populations, general disease mechanisms, and career opportunities in the wildlife profession.

201 Seminar in Wildlife Health (1) All aspects of wildlife health with an emphasis on current events and research. Prerequisite: 101.

301 Introduction to Wildlife Diseases (3) Fundamentals of wildlife health and disease emphasizing relevant current information on the biology of physiological diseases, infectious agents, pathogenesis, epidemiology, wildlife management, interrelationships among diseases of wild animals, humans and domestic animals, and molecular techniques. Prerequisite: 201, Microbiology 310, 319.

305 Prescribed Fire Management (2) Prescribed fire ecology, use, and management in forest stands. Prerequisite: Forestry, Wildlife and Fisheries 312.

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.

340 Wetlands Ecology and Management (2) Ecology, restoration, and management of wetland ecosystems including biotic and abiotic processes, functions, and wildlife considerations. Prerequisite: Forestry, Wildlife and Fisheries 317, or consent of instructor.

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. Prerequisite: English 102 and Communication Studies 210 or 240 or consent of instructor.

350 Wildlife Damage Management (2) Principles and methods for wildlife damage management including biological, regulatory, practical, and social considerations. Weekend field trips (2) required. 2 hours and 1 lab or field. Prerequisite: Forestry, Wildlife and Fisheries 317 or consent of instructor.

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. 1 hour and 1 lab or field. Prerequisite: Forestry, Wildlife and Fisheries 317 or consent of instructor.

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. 1 hour and 1 lab or field. Prerequisite: Forestry, Wildlife and Fisheries 317 or consent of instructor.

443 Fisheries Science (3) Quantification and management of freshwater fisheries including population estimation, age and growth, biological assessment, and stocking. 2 hours and 1 lab. Prerequisite: Forestry, Wildlife, and Fisheries 317 or consent of instructor.

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. 2 hours and 1 lab. One weekend field trip required. Prerequisite: Forestry, Wildlife, and Fisheries 317 or consent of instructor.

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. 2 hours and 1 lab. One weekend field trip required. Prerequisite: Forestry, Wildlife, and Fisheries 317 or consent of instructor.

446 Fish Culture (3) Principles, concepts, and techniques of culturing economically important fish and shellfish species. 2 hours and 1 lab. Prerequisite: Senior standing. Students cannot receive credit for both 455 and 555.

456 Recirculating Aquaculture (3) Growing fish in intensive, indoor systems with reconditioned water. Techniques of solids removal, nitrification, and gas balance. Practical experience with operating system. Prerequisite: Senior standing. Students cannot receive credit for both 456 and 556.

493 Independent Study in Wildlife and Fisheries Science (1-15) Special research or individual problem in wildlife and fisheries science.

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. Prerequisite: Junior standing, consent of instructor. May be repeated. Maximum 6 hours.
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) (See Child and Family Studies 220.) (SS)

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) (See Religious Studies 320.)

330 Women in Music (3) (See Musicology.) (WC)

332 Women in American Literature (3) (See 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. Writing-emphasis course. (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. Writing-emphasis course.

375 Gender in Society (3) (See Sociology 375.)

382 Philosophy of Feminism (3) (See Philosophy 382.) (WC)

383 Women in the Greek and Roman World (3) (See Classics 383.)

400 Topics in Women’s Studies (3) Content varies. May be repeated.

410 Sex Role Development: Implications for Education and Counseling (3) (See Counselor Education 410.)

422 Women Writers in Britain (3) (See English 422.)

425 Women’s Health (3) (See Health 425.)

432 Women in European History (3) (See History 432.)

433 French and Francophone Women Writers (3) (See French 433.)

434 Psychology of Gender (3) (See Psychology 434.)

453 Women in American History (3) (See History 453.)

465 Media and Diversity (3) (See Journalism and Electronic Media 465.)

466 Rhetoric of the Woman’s Rights Movement to 1930 (3) (See Communication Studies 466.)

469 Sexuality and Cinema (3) Explores issues surrounding sexuality, gender and cinema from points of view of feminist film criticism. Writing-emphasis course. (Same as Cinema Studies 469.)

476 Rhetoric of the Contemporary Feminist Movement (3) (See Communication Studies 476.)

483 African-American Women in American Society (3) (See 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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