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 can also be found at

- The University of Tennessee Homepage http://www.tennessee.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
- Hilltopics Student Handbook http://web.utk.edu/~ homepage/hilltopics

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.

The university welcomes and honors people of all races, genders, creeds, cultures, and sexual orientations, and values intellectual curiosity, pursuit of knowledge, and academic freedom and integrity.

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

A project of the Office of the University Registrar, 209 Student Services Building, Knoxville, Tennessee 37996-0200.
Publication Authorization Number E17-0405-002-010-08.
# ACADEMIC CALENDAR FOR 2008-2009

## Fall 2008 Semester
- **Classes Begin**: Wednesday, August 20
- **Labor Day**: Monday, September 1
- **1st Session Ends**: Wednesday, October 8
- **Fall Break**: Thursday – Friday, October 9-10
- **2nd Session Begins**: Monday, October 13
- **Thanksgiving**: Thursday – Friday, November 27-28
- **Classes End**: Tuesday, December 2
- **Study Days**: Wednesday (Saturday & Sunday), December 3 (6 & 7)
- **Exams**: Thursday, Friday (am) & Monday – Thursday, December 4, 5, 8, 9, 10, 11
- **Graduate Hooding**: Friday, December 12
- **Commencement**: Saturday, December 13

## Spring 2009 Semester
- **Classes Begin**: Wednesday, January 7
- **MLK Holiday**: Monday, January 19
- **1st Session Ends**: Wednesday, February 25
- **2nd Session Begins**: Thursday, February 26
- **Spring Break**: Monday – Friday, March 16-20
- **Spring Recess**: Friday, April 10
- **Classes End**: Friday, April 24
- **Study Days**: Monday (Saturday & Sunday), April 27 (25 & 26)
- **Exams**: Tuesday – Tuesday, April 28, 29, 30; May 1, 4, 5
- **Graduate Hooding**: Thursday, May 7
- **College Commencement Ceremonies**: Friday, May 8

## Summer 2009 Semester
- **Mini Session Begins**: Wednesday, May 6
- **Memorial Holiday**: Monday, May 25
- **Mini Session Ends**: Wednesday, May 27
- **Full and 1st Session Begin**: Monday, June 1
- **1st Session Ends**: Thursday, July 2
- **Independence Day Holiday**: Friday, July 3
- **2nd Session Begins**: Monday, July 6
- **Full and 2nd Sessions End**: Thursday, August 6
- **Summer Graduation Date**: Friday, August 14

*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 at [http://registrar.utk.edu/academic_calendar.shtml](http://registrar.utk.edu/academic_calendar.shtml)
# THE UNIVERSITY OF TENNESSEE

## BOARD OF TRUSTEES

**Ex-Officio Members From Congressional Districts**  
**District** | **Service Begins** | **Term Ends**  
--- | --- | ---  
Commissioner of Agriculture | James E. Hall | Third | 2006 | May 31, 2012  
Executive Director, Tennessee Higher Education Commission | James L. Murphy III | Fifth | 2003 | May 31, 2009  
Governor, State of Tennessee | Andrea J. Loughry | Sixth | 1999 | May 31, 2011  
Commissioner of Agriculture | Anne Holt Blackburn | Seventh | 2006 | May 31, 2012  
President, The University of Tennessee | Jerry L. Jackson | Eighth | 1996 | May 31, 2008  

## Officers of the Board

- Governor Phil Bredesen, Chair  
- Andrea J. Loughry, Vice Chair

## UNITED STATES CONGRESS

**From Anderson, Bedford, Coffee, Franklin, Lincoln, Moore, and Warren Counties**  
**Term Begins** | **Term Ends**  
--- | ---  
Charles Wharton | 2006 | May 31, 2012

**From Davidson County**  
**Term Begins** | **Term Ends**  
--- | ---  
Spruell Driver, Jr. | 2005 | May 31, 2011

**From Hamilton County**  
**Term Begins** | **Term Ends**  
--- | ---  

**From Knox County**  
**Term Begins** | **Term Ends**  
--- | ---  
Charles Anderson, Jr. | 2007 | May 31, 2013  

**From Shelby County**  
**Term Begins** | **Term Ends**  
--- | ---  
Rhynette N. Hurd | 2001 | May 31, 2008

**From Weakley County**  
**Term Begins** | **Term Ends**  
--- | ---  

## STUDENT MEMBERS

**Term Begins** | **Term Ends**  
--- | ---  
Brittany McGruder | 2007 | May 31, 2009  
Anna York | 2006 | May 31, 2008

## FACULTY MEMBERS

**Term Begins** | **Term Ends**  
--- | ---  
Candace White | 2006 | May 31, 2008  
John Schommer | 2007 | June 30, 2009

---

## UNIVERSITY OF TENNESSEE ADMINISTRATION

**John D. Petersen, BS, PhD, President**  
**Margie Nichols, BA, Executive Assistant to the President**  
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**Lofton Stuart, BS, Executive Director, University of Tennessee National Alumni Association and Assistant to the President**  
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**Jan Simek, BA, MS, PhD, Interim Chancellor**  
**Denise Barlow, BS, CPA, MBA, Vice Chancellor for Finance and Administration**  
**Linda Davidson, BA, Vice Chancellor for Development (and Associate Vice President for Development)**  
**Bradley W. Fenwick, BS, MS, DVM, PhD, Interim Vice Chancellor for Research**  

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## KNOXVILLE CAMPUS ADMINISTRATION

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**Tom Milligan, BA, MBA, Vice Chancellor for Communications**  
**W. Timothy Rogers, BA, MA, JD, Vice Chancellor for Student Affairs**  
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**Bruce E. Bursten, SB, PhD, Dean, College of Arts and Sciences**  
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**Michael O. Wirth, BS, MA, PhD, Dean, College of Communication and Information**  
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**Richard L. Bayer, BA, MA, Dean of Enrollment Services**  
**Barbara L. Dewey, BA, MA, Dean of University Libraries**  
**Carolyn R. Hodges, BA, MA, PhD, Vice Provost and Dean of the Graduate School**  
**Maxine Thompson, BA, MS, EdD, Dean of Students**
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Bachelor of Science  
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Bachelor of Science in Animal Science  
Bachelor of Science in Biomedical Engineering  
Bachelor of Science in Biosystems Engineering  
Bachelor of Science in Business Administration  
Bachelor of Science in Chemical Engineering  
Bachelor of Science in Chemistry  
Bachelor of Science in Civil Engineering  
Bachelor of Science in Communication  
Bachelor of Science in Computer Engineering  
Bachelor of Science in Computer Science  
Bachelor of Science in Education  
Bachelor of Science in Electrical Engineering  
Bachelor of Science in Engineering Physics  
Bachelor of Science in Environmental and Soil Sciences  
Bachelor of Science in Food Science  
Bachelor of Science in Forestry  
Bachelor of Science in Health and Human Sciences  
Bachelor of Science in Industrial Engineering  
Bachelor of Science in Interior Design  
Bachelor of Science in Materials Science and Engineering  
Bachelor of Science in Mechanical Engineering  
Bachelor of Science in Nuclear Engineering  
Bachelor of Science in Nursing  
Bachelor of Science in Plant Sciences  
Bachelor of Science in Service Management  
Bachelor of Science in Social Work  
Bachelor of Science in Wildlife and Fisheries Science
## College of Agricultural Sciences and Natural Resources

<table>
<thead>
<tr>
<th>DEPARTMENT (UNIT)</th>
<th>MAJOR</th>
<th>MINOR</th>
<th>CONCENTRATION</th>
<th>DEGREE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture and Natural Resources (Interdepartmental)</td>
<td>Agriculture and Natural Resource Leadership, Education and Communications</td>
<td>YES</td>
<td>International Agriculture and Natural Resources</td>
<td>minor only</td>
</tr>
<tr>
<td>Agricultural Economics</td>
<td>Natural Resource and Environmental Economics (pending approval from THEC)</td>
<td>YES</td>
<td>MAJORS MUST CHOOSE A CONCENTRATION</td>
<td>BS in Agriculture</td>
</tr>
<tr>
<td></td>
<td>Food and Agricultural Business</td>
<td>YES</td>
<td>Agricultural Science</td>
<td>BS in Agriculture</td>
</tr>
<tr>
<td>Animal Science</td>
<td>Animal Science</td>
<td>YES</td>
<td>MAJORS MUST CHOOSE A CONCENTRATION</td>
<td>BS in Animal Science</td>
</tr>
<tr>
<td>Biosystems Engineering and Soil Science</td>
<td>Biosystems Engineering</td>
<td>YES</td>
<td>Pre-Professional</td>
<td>BS in Biosystems Engineering</td>
</tr>
<tr>
<td></td>
<td>Environmental and Soil Sciences</td>
<td>YES</td>
<td>MAJORS MUST CHOOSE A CONCENTRATION</td>
<td>BS in Environmental and Soil Sciences</td>
</tr>
<tr>
<td>Entomology and Plant Pathology</td>
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<td>YES</td>
<td>Entomology and Plant Pathology</td>
<td>minor only</td>
</tr>
<tr>
<td>Food Science and Technology</td>
<td>Food Science and Technology</td>
<td>YES</td>
<td>MAJORS MUST CHOOSE A CONCENTRATION</td>
<td>BS in Food Science</td>
</tr>
<tr>
<td>Forestry, Wildlife and Fisheries</td>
<td>Forestry</td>
<td>YES</td>
<td>MAJORS MUST CHOOSE A CONCENTRATION</td>
<td>BS in Forestry</td>
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<td></td>
<td>Wildlife and Fisheries Science</td>
<td>YES</td>
<td>MAJORS MUST CHOOSE A CONCENTRATION</td>
<td>BS in Wildlife and Fisheries Science</td>
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<tr>
<td>Plant Sciences</td>
<td>Plant Sciences</td>
<td>YES</td>
<td>MAJORS MUST CHOOSE A CONCENTRATION</td>
<td>BS in Plant Sciences</td>
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</tbody>
</table>

## College of Architecture and Design

<table>
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<th>MAJOR</th>
<th>CONCENTRATION</th>
<th>DEGREE</th>
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</thead>
<tbody>
<tr>
<td>School of Architecture</td>
<td>Architecture</td>
<td></td>
<td>Bachelor of Architecture</td>
</tr>
<tr>
<td>Interior Design (Program)</td>
<td>Interior Design</td>
<td></td>
<td>BS in Interior Design</td>
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</tbody>
</table>

## College of Arts and Sciences

<table>
<thead>
<tr>
<th>DEPARTMENT (UNIT)</th>
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<th>CONCENTRATION</th>
<th>DEGREE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anthropology</td>
<td>Anthropology</td>
<td></td>
<td>Bachelor of Arts</td>
</tr>
</tbody>
</table>

**ABBREVIATIONS:**

- BA- Bachelor of Arts
- BS- Bachelor of Science
<table>
<thead>
<tr>
<th>DEPARTMENT (UNIT)</th>
<th>MAJOR</th>
<th>MINOR</th>
<th>CONCENTRATION</th>
<th>DEGREE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Art, School of</td>
<td>Art History</td>
<td>YES</td>
<td>Bachelor of Arts</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Graphic Design</td>
<td>YES</td>
<td>Bachelor of Fine Arts</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Studio Art</td>
<td>YES</td>
<td>Bachelor of Arts</td>
<td></td>
</tr>
<tr>
<td></td>
<td>MAJORS MUST CHOOSE A CONCENTRATION</td>
<td></td>
<td>Bachelor of Fine Arts</td>
<td></td>
</tr>
<tr>
<td></td>
<td>*Ceramics</td>
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<td>*Dual Concentration Internal Auditing</td>
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<td>*Dual Concentration International Business</td>
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### College of Education, Health, and Human Sciences

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<td>Educational Psychology and Counseling</td>
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<td></td>
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<td>Reliability and Maintainability Engineering minor only</td>
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</table>

Undergraduate Majors, Minors, Concentrations, and Degrees / The University of Tennessee, Knoxville / 2008-2009 Academic Year / Listed by College and Department
Glossary

Academic Calendar – An official list of dates found at the beginning of the Undergraduate Catalog and on the Web at 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 Probation – A status that indicates a student is in academic difficulty. Students are placed on Academic Probation when either their cumulative grade point average (GPA) falls below the minimal acceptable level of 2.00 for one semester or when their semester GPA falls below the minimal acceptable level of 2.00 for two consecutive terms of enrollment.

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

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

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

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

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 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 2.00, 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.

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.

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 – 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 second 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).

Registration Restriction(s) – Conditions for enrollment enforced by the Registration System. These restrictions may include one or more of the following – minimum GPA, student level, college, major, concentrations, degree, or a qualification such as teacher licensure.

Satisfactory/No Credit Grading (S/NC) – An alternative to the standard grading system of letter grades.

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 databases 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 composition 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

ANTHROPOLOGY
210 Principles of Biological Anthropology

ANIMAL SCIENCE
280 Biotechnology and Management Practices in Animal Production

ARCHITECTURE
213 History and Theory of Contemporary Architecture

ART HISTORY
376 Seminar in Art History

BIOCHEMISTRY AND CELLULAR AND MOLECULAR BIOLOGY
409 Perspectives in Biochemistry and Cellular and Molecular Biology

CHEMICAL ENGINEERING
310 Chemical and Biomolecular Engineering Laboratory

CHEMISTRY
479 Physical Chemistry Laboratory I

CHILD AND FAMILY STUDIES
405 Development of Professional Skills

CIVIL ENGINEERING
205 Professional Development I

ELECTRICAL AND COMPUTER ENGINEERING
400 Senior Design

ENGLISH
206 Introduction to Shakespeare
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 Cooperative Learning Experience

**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
444 Journalism as Literature
450 Writing About Science and Medicine *(same as Information Sciences 450)*
451 Environmental Writing
456 Science Writing as Literature

**JUDAIC STUDIES**
322 Medieval Philosophy *(same as Medieval Studies 322 and Philosophy 322)*

**MATERIALS SCIENCE AND ENGINEERING**
405 Structural Characterization of Materials

**MEDIEVAL STUDIES**
322 Medieval Philosophy *(same as Judaic Studies 322 and Philosophy 322)*

**MUSIC EDUCATION**
430 Music Methods for High School

**MUSICOLOGY**
210 History of Western Music, Ancient to Baroque
330 Women in Music *(same as Women’s Studies 330)*
380 Music in World Cultures

**NUCLEAR ENGINEERING**
304 Nuclear and Radiological Engineering Laboratory I
403 Nuclear and Radiological Engineering Laboratory II

**NURSING**
403 Health Promotion and Maintenance in Childbearing Families
494 Alternative Preceptorship

**NUTRITION**
412 Food and Nutrition in the Community

**PHILOSOPHY**
241 Engineering Ethics
243 Business Ethics
246 Bioethics
290 Social and Political Philosophy
320 Ancient Western Philosophy
322 Medieval Philosophy *(same as Medieval Studies 322 and Judaic Studies 322)*
324 17th- and 18th-Century Philosophy
326 19th- and 20th-Century Philosophy
327 Honors: Ancient Western Philosophy
328 Honors: 17th- and 18th-Century Philosophy
340 Ethics
347 Honors: Ethics
382 Philosophy of Feminism *(same as Women’s Studies 382)*
390 Philosophical Foundations of Democracy

**PLANT SCIENCES**
410 Nursery Management and Production
448 Horticultural Internet Communication

**RETAIL AND CONSUMER SCIENCES**
390 Professional Development *(same as Hotel, Restaurant, and Tourism 390)*

**RUSSIAN**
221 Rebels, Dreamers, and Fools: The Outcast in 19th-Century Russian Literature

**SOCIAL WORK**
314 Human Behavior and the Social Environment

**SOCIOLOGY**
260 Introduction to the Study of Environmental Issues
495 Social Justice and Community Service

**THEATRE**
300 Play Analysis

**WOMEN’S STUDIES**
330 Women in Music *(same as Musicology 330)*
382 Philosophy of Feminism *(same as Philosophy 382)*

**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 it 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**

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**AEROSPACE ENGINEERING**
410 Professional Topics

**ANIMAL SCIENCE**
360 Horse, Dairy, and Meat Animal Evaluation

**ART DESIGN/GRAFIC**
452 Design Seminar

**BIOLOGY**
157 Honors Experimental Biology

**BIOMEDICAL ENGINEERING**
410 Professional Topics

**BIOSYSTEMS ENGINEERING**
401 Biosystems Engineering Design I

**CHEMISTRY**
406 Senior Seminar

**CHILD AND FAMILY STUDIES**
405 Development of Professional Skills

**CIVIL ENGINEERING**
205 Professional Development I

**ELECTRICAL AND COMPUTER ENGINEERING**
400 Senior Design

**ENVIRONMENTAL AND SOIL SCIENCES**
301 Professional Development

**MATERIALS SCIENCE AND ENGINEERING**
489 Materials Design

**MECHANICAL ENGINEERING**
410 Professional Topics

**NUCLEAR ENGINEERING**
400 Senior Seminar
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 147 and 148; Mathematics 151 and 152; Mathematics 201 or 207; Mathematics 115 and 123 or 125 or 202.).

MATHEMATICS
113 Mathematical Reasoning
115 Statistical Reasoning
117 Honors Mathematical 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

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†
117 Honors: 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 I and II
128–138 Honors: General Chemistry I and II

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 I and II

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†
205 Age of the Dinosaurs†
207 Honors: Age of Dinosaurs†
208 Honors: Earth as an Ecosystem: Modern Problems and Solutions†

HASLAM SCHOLARS PROGRAM
288 Energy in the Modern World†

MICROBIOLOGY
210 General Microbiology
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.

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<thead>
<tr>
<th>APPROVED ARTS AND HUMANITIES (AH) COURSES</th>
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<tbody>
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<td>AFRICANA STUDIES</td>
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<td>233 Major Black Writers (same as English 233)</td>
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<td>225 Introduction to African Literature (same as English 225)</td>
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<td>ARCHITECTURE</td>
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<td>111 Architecture and the Built Environment</td>
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<tr>
<td>117 Honors: Architecture and the Built Environment</td>
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<tr>
<td>211 History and Theory of Architecture I</td>
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<td>212 History and Theory of Architecture II</td>
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<td>217 Honors: History and Theory of Architecture I</td>
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<tr>
<td>ART HISTORY</td>
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<tr>
<td>162 Art of Africa, Oceania, and Pre-Columbian America (same as Africana Studies 162)</td>
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<tr>
<td>167 Honors: Art of Africa, Oceania, and Pre-Columbian America</td>
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<td>172 Western Art I</td>
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<td>173 Western Art II</td>
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<td>177 Honors: Western Art I</td>
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<td>178 Honors: Western Art II</td>
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<td>183 Asian Art</td>
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<td>187 Honors: Asian Art</td>
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<td>CLASSICS</td>
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<td>221 Early Greek Mythology</td>
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<td>222 Classical Greek and Roman Mythology</td>
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<td>232 Archaeology and Art of Ancient Greece and Rome</td>
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<td>253 Greek and Roman Literature in English Translation</td>
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<td>ENGLISH</td>
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<td>201 British Literature I: Beowulf through Johnson</td>
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<td>202 British Literature II: Wordsworth to the Present</td>
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<td>206 Introduction to Shakespeare</td>
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<td>207 Honors: British Literature I</td>
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<td>208 Honors: British Literature II</td>
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<tr>
<td>221 World Literature I: Ancient through Early Modern</td>
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| HASLAM SCHOLARS PROGRAM                  |  |
| 258 Foundations of Modernity             |  |
| MUSICOLOGY                                |  |
| 110 Introduction to Music in Western Culture |  |
| 115 Music in the United States           |  |
| 120 History of Rock                      |  |
| 125 Jazz in American Culture             |  |
| 210 History of Western Music, Ancient to the Baroque |  |
| 220 History of Western Music, Classical to the Present |  |
| 290 Soundscapes: Exploring Music in a Changing World |  |
| PHILOSOPHY                                |  |
| 110 The Human Condition: Values and Reality |  |
| 111 The Human Condition: Knowledge and Reality |  |
| 117 Honors: Introduction to Philosophy    |  |
| 118 Honors: Introduction to Philosophy    |  |
| 241 Engineering Ethics                   |  |
| 242 Contemporary Moral Issues            |  |
| 243 Business Ethics                      |  |
| 244 Professional Responsibility (same as Religious Studies 244) |  |
| 245 Environmental Ethics                 |  |
| 246 Bioethics                            |  |
| 290 Social and Political Philosophy      |  |
| RELIGIOUS STUDIES                        |  |
| 244 Professional Responsibility (same as Philosophy 244) |  |
| RUSSIAN                                  |  |
| 221 Rebels, Dreamers, and Fools: The Outcast in 19th-Century Russian Literature |  |
| 222 Heaven or Hell: Utopias and Dystopias in 20th-Century Russian Literature |  |
| THEATRE                                  |  |
| 100 Introduction to Theatre              |  |
| UNIVERSITY HONORS                        |  |
| 257 Special Topics in the Arts and Humanities |  |
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

AFRICANA STUDIES
201 Introduction to African-American Studies
202 Introduction to African-American Studies

ANTHROPOLOGY
130 Cultural Anthropology
137 Honors: Cultural Anthropology

CHILD AND FAMILY STUDIES
210 Human Development
220 Marriage and Family: Roles and Relationships (same as Women's Studies 230)

ECONOMICS
201 Introductory Economics: A Survey Course
207 Honors: Introductory Economics

GEOGRAPHY
101-102 World Geography

HASLAM SCHOLARS PROGRAM
268 Perspectives on Globalization

POLITICAL SCIENCE
102 Introduction to Political Science

PSYCHOLOGY
110 General Psychology
117 Honors: General Psychology

SOCIOLGY
110 Social Justice and Social Change
117 Honors: Social Justice and Social Change
120 General Sociology
127 Honors: General Sociology

UNIVERSITY HONORS
267 Special Topics in the Social Sciences

WOMEN'S STUDIES
230 Marriage and Family: Roles and Relationships (same as Child and Family Studies 220)

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
(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

AFRICANA STUDIES
235–236 Introduction to African Studies

ANTHROPOLOGY
120 Prehistoric Archaeology
127 Honors: Prehistoric Archaeology

ASIAN STUDIES
101–102 Asian Civilization

CLASSICS
201 Introduction to Classical Civilization

ENVIRONMENTAL AND SOIL SCIENCES
120 Soils and Civilizations
220 Waters and Civilizations

GLOBAL STUDIES
250 Introduction to Global Studies (same as Sociology 250)

HISTORY
241–242 Development of Western Civilization
247–248 Honors: Development of Western Civilization
255–256 Introduction to Latin American Studies (same as Latin American Studies 251–252)
261–262 A History of World Civilization
267-268 Honors: A History of World Civilization

LATIN AMERICAN STUDIES
251–252 Introduction to Latin American Studies (same as History 255–256)

MEDIEVAL STUDIES
201–202 Medieval Civilization

RELIGIOUS STUDIES
101 World Religions in History
102 The Comparison of World Religions
107 Honors: World Religions in History

SOCIOLOGY
250 Introduction to Global Studies (same as Global Studies 250)

UNIVERSITY HONORS
277 Special Topics in Cultures and Civilizations

INTERMEDIATE FOREIGN LANGUAGE SEQUENCES

ARABIC
221–222 Intermediate Modern Standard Arabic I, II (same as Asian Studies 221–222)

ASIAN LANGUAGES
231–232 Intermediate Chinese I, II (same as Chinese 231–232)
251–252 Intermediate Japanese I, II (same as Japanese 251–252)

ASIAN STUDIES
221–222 Intermediate Modern Standard Arabic I, II (same as Arabic 221–222)
241–242 Intermediate Modern Hebrew I, II (same as Hebrew 241–242)
261–262 Intermediate Persian I, II (same as Persian 261–262)

CHINESE
231–232 Intermediate Chinese I, II (same as Asian Languages 231–232)
CLASSICS
251–252 Intermediate Latin I, II
261 Intermediate Greek: Grammar Review and Readings
264 Intermediate Greek: Epic Poetry

FRENCH
211–212 Intermediate French I, II
217–218 Honors: Intermediate French I, II

GERMAN
201–202 Intermediate German I, II

HEBREW
241–242 Intermediate Modern Hebrew I, II (same as Asian Studies 241–242)

ITALIAN
211–212 Intermediate Italian

JAPANESE
251–252 Intermediate Japanese I, II (same as Asian Languages 251–252)

PERSIAN
261–262 Intermediate Persian I, II (same as Asian Studies 261–262)

PORTUGUESE
211–212 Intermediate Portuguese

RUSSIAN
201–202 Intermediate Russian

SPANISH
211–212 Intermediate Spanish
217–218 Honors: Intermediate Spanish

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 Tennessee.

UT Knoxville ranks in the top tier of public research universities and its student quality increases with each entering class. Meanwhile, new scholarships have made the university more accessible to students throughout the state. The university offers more than 300 degree programs to its 26,500 students, who come from every county in Tennessee, every U.S. state, and more than 100 nations. A faculty of almost 1,400 provides high-quality educational experiences to students while also performing research and providing public service to the state and nation.

UT Knoxville is a major research institution that attracts more than $130 million in research awards annually. Nationally ranked programs include supply chain management/logistics, nuclear engineering, printmaking, accounting, the master of business administration, law, and social work. The library also ranks as one of the nation's best.

The university is embracing a major new effort to prepare students to compete and succeed in today's global society. Objectives of “Ready for the World: the International and Intercultural Awareness Initiative” include increasing the number of students who study abroad and internationalizing the curriculum.

UT-Battelle manages nearby Oak Ridge National Laboratory for the U.S. Department of Energy. UT teamed with Battelle, a global science and technology company, to win a five-year management contract in 2000. The contract was renewed with the highest possible ratings by DOE. The state of Tennessee supports the UT-Oak Ridge partnership with major investments for facilities and world-class scientists. More than 30 joint appointments solidify the partnership. The university and ORNL share focus areas in neutron science, biological science, computational science, and materials science.

Through outreach and public service, the university extends its resources throughout the state and nation. The university has a major impact on statewide economic development, and its continuing education programs extend educational opportunities to working adults.

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 forces.

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 1889 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 has a presence in each of the state’s 95 counties. In addition to the flagship campus at Knoxville, the UT system includes campuses at Chattanooga and Martin, the Health Science Center at Memphis, and the Space Institute at Tullahoma. Statewide institutes of agriculture and public service have installations throughout Tennessee. 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, seven Pulitzer Prize winners, and eleven NASA astronauts. University of Tennessee alumni number more than 300,000.

**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 critical 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 use 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/AA/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 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 Melissa 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.

The University of Tennessee, Knoxville, in its efforts to ensure a welcoming environment for all persons, does not discriminate on the basis of sexual orientation in its campus-based programs, services, and activities. Inquiries and complaints should be directed to the Office of Equity and Diversity.

**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. 812) and alcohol on university property or during university activities.

Violation of this policy is grounds for disciplinary action – up to and including immediate discharge for an employee and permanent dismissal for a student. Federal and state laws provide additional penalties for such unlawful activities, including fines and imprisonment (21 U.S. C. 841 et seq.; T.C.A. 39-17-401 et. seq.) Local ordinances also provide various penalties for drug and alcohol-related offenses. The university is bound to take all appropriate actions against violators, which may include referral for legal prosecution or requiring the individual to participate satisfactorily in an approved drug use/alcohol abuse assistance or rehabilitation program.

Aside from any university policy considerations, the use of illicit drugs and/or the abuse of alcohol may be harmful to your health. Some of the health risks associated with such use/abuse are:

**Alcohol Abuse Health Risks**

- Liver damage – cirrhosis, alcoholic hepatitis.
- Heart disease – enlarged heart, congestive heart failure.
- Ulcers and gastritis.
- Malnutrition.
- Cancer – of the mouth, esophagus, stomach, liver.
- Brain damage – memory loss, hallucinations, psychosis.
- Damage to fetus if pregnant mother drinks.
- Death – 50% of fatal auto accidents involve alcohol; 31% of suicides are alcoholics.

**Drug Use Health Risks**

- Overdosing – psychosis, convulsions, coma, death.
- Long-term use – organ damage, mental illness, malnutrition, death.
- Casual use – heart attack, stroke, brain damage, death.
- If a pregnant mother uses drugs, her baby can be born addicted or dead.

Individuals who are paid by the University of Tennessee from federal grants or contracts must notify the university of any criminal drug statute conviction for a violation occurring in the workplace within five days after such conviction. The university is, in turn, required to inform the granting or contracting agency of such violation within ten days of the university’s receipt of notification.
Employees and their families needing treatment information should call their local Human Resources, Employee Assistance Program, or the State of Tennessee Employee Assistance Program (800-308-4934). Students needing treatment information should contact their campus Student Affairs Office, Student Health Center, or Counseling Center.

**Security Information**

In accordance with the Tennessee College and University Security Information Act of 1989 and the Student Right-To-Know and Campus Security Act (1999 Clery Act), the University of Tennessee has prepared a report containing campus security policies and procedures, data on campus crimes and other related information. The UT Security Brochure for the Knoxville campus is available on the Office of the Dean of Students Web page at http://dos.utk.edu, where you may print the entire document for your use. In addition, a free printed copy of this report may be obtained by any student, employee, or applicant for admission or employment from the Office of the Dean of Students, 413 Student Services Building or at the UT Police Department, 1101 Cumberland Avenue.

**ADMISSION TO THE UNIVERSITY OF TENNESSEE**

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

**Undergraduate Admission**

http://www.admissions.utk.edu

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.

The application for undergraduate admission is available on the web at www.apply.utk.edu and should be submitted electronically. A copy of the application form is available on 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 must 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: adm2utk@utk.edu
  Phone: (901) 448-8289

**Freshman Admission**

The University of Tennessee calculates a core GPA based upon a four-point grading scale in high school courses 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 Advanced 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 Chancellor’s Honors Program.

UT Knoxville accepts either the ACT or SAT (CR + M) examination and does not require the ACT or SAT essay.

**Dual Enrollment Students**

Academically talented students attending Tennessee high schools may apply to enroll at UT Knoxville and receive both college and high school 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 3.20 or higher on a 4.00 scale, and submit the application for undergraduate admission and application fee.

**Transfer Admission**

The admission decision for transfer students with fewer than 30 earned transferable college-level hours will be based on their high school GPA, ACT/SAT scores, and a minimum required college GPA of 2.50.

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 2.00 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 2.00 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.

**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.
Advanced Placement – International Baccalaureate – CLEP – 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 (AP), International Baccalaureate Examinations (IB), and College Level Examination Program tests (CLEP). Information is available at http://admissions.utk.edu/undergraduate/ap.shtml.

Course credit may also be earned by high school students who enroll in dual enrollment courses at colleges and universities to fulfill their high school graduation requirements while receiving college credits.

See the section on “Academic Policies and Procedures” of this catalog for additional information.

Articulation Agreements
Articulation agreements are programs developed between nearby two-year colleges and the University of Tennessee, Knoxville. While at the two-year college, students take a specified 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.

Residency Classification for the Purpose of Paying University Fees and for Admission Purposes
Initial residency classification is determined by an admissions processor from information included on the University of Tennessee, Knoxville, Application for Admission. Notice of classification is sent at the time the applicant is notified of admission. 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 the last day of registration in order to have the reclassification effective for the semester. Classification will be determined and the applicant will be notified by mail. Additional information regarding the State of Tennessee regulations for classification may be found at the Office of the University Registrar Web site http://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 at the undergraduate level, in the Academic Common Market are Alabama, Arkansas, Delaware, Georgia, Kentucky, Louisiana, Maryland, Mississippi, Oklahoma, South Carolina, Tennessee, 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 the 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 who previously attended UT Knoxville as a non-degree seeking student and wishes to re-enter as a degree-seeking student must complete an application for undergraduate admission. 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.

Readmission after Academic Suspension
Students who have been academically suspended from UT Knoxville must apply for readmission by June 1 for fall, November 1 for spring, and April 1 for summer. Submitting an application does not guarantee admission.

First Academic Dismissal
A student dismissed for the first time may not be readmitted until after a full semester (not including summer) has elapsed.

Second Academic Dismissal
A student dismissed for the second time may be readmitted after one calendar year has elapsed and after completing a minimum of 12 semester credits of academic coursework with at least a 2.50 cumulative grade point average from accredited institution(s) of higher education. Students who have been dismissed twice are required to meet with the Undergraduate Council Appeals Committee. Students may be readmitted only when they present evidence that they are capable of performing at the level required to meet university academic standards and completing all degree requirements within a reasonable length of time.

Third Academic Dismissal
After a third dismissal, a student is ineligible to attend the university and may not apply for readmission.

Students who have been dismissed and are readmitted will be required to participate in a special program that emphasizes academic success skills and strategies.

Students who have been academically dismissed and who are readmitted will be dismissed again if they fail to earn a 2.00 minimum term GPA at the end of the first semester after readmission and every term thereafter until the cumulative GPA reaches 2.00.

Senior and Disabled Applicants
Persons 60 years or older or totally disabled persons who are residents of Tennessee may audit a 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. 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 Office of Graduate and In-
Proof of English Proficiency

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. These records must be provided in the original language as well as English.
3. Evidence of English proficiency according to the following requirements for those whose first language is not English.
   a. All undergraduate applicants regardless of citizenship whose native language is not English are required to demonstrate proficiency in one of the following ways. (1) Test of English as a Foreign Language (TOEFL) exam – minimum score of 193 (computer-based), 523 (paper-based), or 70 on the iBT TOEFL (internet-based); or (2) a minimum score of 6.5 on the International English Language Testing System (IELTS) exam; or (3) a minimum score of 21 on the English portion of the ACT or a score of 510 on the critical reading portion of the SAT; or (4) college credit or AP credit received for English Composition 101 and 102 or the equivalent; or (5) completion of the University of Tennessee English language Institute’s (ELI) core intensive curriculum with recommendation from the ELI faculty. A final admission decision will not be made until test results are received by the office of Graduate and International Admissions from the Educational Testing Service (ETS) directly.
   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 or IELTS score 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.
4. International students must enroll in the health and accident insurance plan provided by UT Knoxville.
5. For international students, completed application forms and international student is required to provide the following.

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4. International students must enroll in the health and accident insurance plan provided by UT Knoxville.
5. For international students, completed application forms and the processing fee must be received in the Office of Graduate and International Admissions no later than the following dates: February 1 for fall semester; July 1 for spring semester; and December 1 for summer term.

Proof of English Proficiency

- TOEFL (523 paper-based, 193 computer-based, and 70 internet-based)
- 6.5 on IELTS (International English Language Testing System)
- Successful completion of ELI (UT English Language Institute) core courses along with faculty recommendations.
- A Holistic Review Committee will evaluate students whose performance is slightly below the minimum requirements. Listed below are factors taken into consideration during a Holistic Review.

Letters of Recommendation

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 if no fees are due.

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, current tuition and fees, fee waiver information, fines and past-due amounts, pending financial aid that can be credited toward fees, any excess funds from scholar- ships 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 9 or more hours are assessed the full-time University Programs and Services Fee. Students enrolled for fewer than 9 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 3 hours) may elect to pay the health portion of the UPSF in addition to the standard prorated assessment. Part-time students enrolled in 6 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.

Late Registration Fee

A late registration fee will be assessed to students who register during Late 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 Late Registration payment due date. This due date is published on the Bursar’s Office Web site. The Late Registration Fee is non-refundable.

See the Bursar’s Office Web site for the dates and fees to be assessed during Late 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 $30 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 charge of registration form is processed or the date the drop was entered on CPO. 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. Many students have established debit or charge accounts which are accessed through use of the VolCard ID.

These cards are non-transferable and may not be duplicated. The VolCard must be carried at all times for purposes of identification. Students are responsible for the safekeeping of this card and must immediately report it lost or stolen if the card is not in their possession. Failure to notify the VolCard office will make the student liable for any unauthorized charges to the debit on charge accounts the student may have.

To obtain a new VolCard or replace a lost or stolen card, report to the VolCard Office, Room 472, South Stadium Hall (between gates 12 and 13 at Neyland Stadium) on Stadium Drive or on the Web at utk.edu/volcard. There is a minimum charge of $30.00 for replacement of a VolCard.

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 UT 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 admitted in a degree program, make satisfactory academic progress, sign a statement of educational purpose and a certification statement on overpayment and default, and register with the Selective Service. Students may not receive aid for correspondence, distance education or telecommunications courses unless they are part of an approved associate, bachelor’s or graduate degree program.

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

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.

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.

All students receiving financial aid are expected to maintain satisfactory academic progress standards to remain eligible to receive financial aid. Information on these standards is available from the Office of Financial Aid and Scholarships.

For additional information on application procedures, please contact the Office of Financial Aid and Scholarships, 115 Student Services Building.

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 1510, 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. Award amounts vary by category and range from $2,000 to $5,500 per academic year. More information may be obtained by writing to the Student Assistance Corporation, 404 James Robertson Parkway, Suite 1510, 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 financial need as determined by the school. For undergraduate students, priority is given to Federal Pell Grant eligible students. The loan will be issued through the Office of Financial Aid and Scholarships, disbursed and repaid to the Student Loan Department in the University of Tennessee Bursar’s Office. Repayment begins following graduation, withdrawal, or when the student ceases to carry at least half-time enrollment.

Eligibility for the Federal Perkins Loan is determined when the student applies for federal aid through 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 2.00 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.

**Federal Stafford Loan Program**

This is a low-interest loan made by a lender of the student's choice, 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 3 percent can 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 disursed 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 3 percent can 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 work 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 it is 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**

The 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 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/

The Black Cultural Center and Minority Student Affairs 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 skills workshops, Black History Month events, Hispanic Heritage Month events, Welcome Week activities and festivals to renowned speakers such as Maya Angelou, Dr. Kweisi Mfume, Cornel West, John Singleton, and Alice Walker.

The 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 create opportunities for students, faculty, and employers who seek services from us.

Career Services, located in Dunford Hall, 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:

• Individual career counseling, career interest inventories, information on majors and careers, and a one credit course on exploring majors and careers.
• Several annual career fairs providing opportunities to speak informally with representatives from 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.
• Access to college-specific professionals to assist students in the transition from college to career.

Students can contact Career Services, 974-5435, for more information or to schedule an appointment.

Center for International Education
http://www.UTInternational.org
http://www.UTIHouse.org

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 remain on campus. 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://www.IHouse.utk.edu and the phone is (865) 974-4453.

Counseling Center
http://www.utk.edu/counselingcenter
The Counseling 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. Anyone experiencing a crisis during the week is seen immediately between 8:00 a.m. and 5:00 p.m. After these hours, students are encouraged to go to the University of Tennessee Medical Center emergency room.

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

Disability Services
http://ods.utk.edu/
The Office of Disability Services (ODS) is the designated office on campus that obtains and files permanent and temporary disability-related documents, certifies students' eligibility for services, determines reasonable accommodations, and develops plans for the provision of such accommodations.

Students who are requesting accommodations are required to submit documentation to verify eligibility as defined by Section 504 of the Rehabilitation Act and the Americans with Disabilities Act, complete an intake form located on the ODS Web site, and participate in a meeting with a coordinator. The documentation must include medical or psychological information from a certified professional, and must verify that the individual is "substantially limited" in one or more "major life activities." Documentation guidelines for a variety of disabling conditions are available on the ODS Web site or can be requested from the office. Eligibility for services is determined on a case-by-case basis by professional staff members within ODS, and must be established before students can receive disability services. In addition, students must be aware that disability accommodations are not retroactive; therefore, students are strongly encouraged to register with ODS upon gaining admittance to the university.

The Office of Disability Services is located in 2227 Dunford Hall, Knoxville, TN 37996-4020 and can be reached via phone (865) 974-6087 V/T and e-mail ods@tennessee.edu.

Educational Advancement Program
http://web.utk.edu/~mcnair/eap/
The Educational Advancement Program student support service is a U.S. Department of Education funded TRIO program designed to provide counseling, academic advising, instructional, tutorial, and mentoring services to students with demonstrated academic needs who are also first generation college students, low income, or who have physical disabilities.

The program serves 250 students and provides the following services to those who meet program eligibility criteria after application and interview.

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

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

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

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.

Mathematics 123 – Finite Mathematics
Mathematics 125 – Basic Calculus
Biology 101, 102 – Humankind in a Biotic World
Chemistry 120, 130 – General Chemistry I and II

Cultural
EAP purchases tickets to the university's cultural attractions, and theatre events each semester, and joins EAP students to attend and broaden their cultural horizons.

Pel 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 Acona 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 and 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.

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. The student's UT email account is the official way the university communicates with students. These accounts may be used for e-mail, course work, research, and personal Web pages. Information and on-line registration for computer accounts are available at http://oit.utk.edu/accounts/. 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 wireless, direct Ethernet, or dial-up connections. UT Knoxville's wireless infrastructure is available in most of the academic and administrative buildings on the Knoxville campus. To provide access to computing facilities on campus, OIT staffs several computing labs including the new Commons located on the second floor of Hodges Library. The computing labs are equipped with Windows XP and Mac OS X computers along with black and white and color laser printers, scanners, and DVD/CD writers. A variety of industry standard software applications are available for use on the machines in the computing laboratories. Refer to http://oit.utk.edu/labs 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, dial 974-9900. The Help Desk may be contacted online by filling out the Help Desk request form which can be found at http://oit.utk.edu/contact.html. For more information, visit the 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 the center. These services include installing academic software free of charge on personally owned computers and helping students diagnose problems with their computers. The center also cleans up virus and spyware infected machines and reloads/upgrades operating systems. The Customer Service Center is located in the Commons, 2nd Floor Hodges Library and is open M-Th 9-9, F 9-4, Sun 4-9.

Technology Training

Several courses are offered aimed at improving skills with the technology available at UT. Life Preserver: An Introduction to UT 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 800 courses available. This training is free to students. For registration and access to the CBT courses on the Web go to http://oit.utk.edu/cbt/

Statistical Consulting Center

The center's mission is to help UT students, faculty, and staff enhance the quality of their research by working together to effectively apply analytical methods, especially statistics. The software we support includes SPSS, SAS, Maple, MATLAB, LabVIEW, QDA Miner, WordStat, Enterprise Miner and Text Miner. The SCC 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. Assistance is available by appointment via the Help Desk at 974-9900, by walk-in at 200 SMC, and by e-mail at StatHelp@utk.edu. For details, see http://oit.utk.edu/scc/.

Innovative Technology Center

The Innovative Technology Center (http://itc.utk.edu) provides the leadership, support, resources, and training necessary to help University of Tennessee faculty, graduate teaching assistants, and academic teaching staff make effective use of technology in their teaching, both online and in the classroom. The ITC supports the university's academic community by providing free production services for the design and development of web-based course materials, implementing faculty grants for instructional technology projects, and administering 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.

Parents Association

http://parents.utk.edu/

The UT Parents Association was founded in 2002 to help parents stay involved with their students and develop their own connection to the university. The mission of the Parents Association is to provide support and information to the parents or guardians of UT students and help them become partners with the university in the education and development of every student. The Parents Association keeps parents/guardians informed about critical campus news, dates to remember, resources to ensure students' academic success, and a host of exciting events taking place on campus. Members of the Association receive weekly e-mail updates, three newsletters each year, and are also eligible to receive discounts at carefully selected local hotels, as well as to attend Family Weekend. Students whose parents/guardians are members are eligible to apply for Travel, Intern, and Volunteer abroad scholarships, and scholarships in the areas of Academics, Leadership, and Service. For further information or questions concerning the Parents Association, call 974-4546 or e-mail parents@utk.edu.

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 9 but at least 3 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://sold.utk.edu

The Office of Student Orientation and Leadership Development familiarizes all entering undergraduate students and their parents/guardians with the university’s services and campus resources and provides students with opportunities to develop the skills necessary for leadership. This is accomplished by developing, enhancing, and promoting quality programs and services to educate students regarding campus involvement, student success, and academic life through peer leadership and experiential learning.

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; e-mail orient@utk.edu

Center for Leadership Development
http://sold.utk.edu

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 UT’s leadership opportunities students can gain valuable skills that are useful in college and to future employees. Students can 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 Library and request special leadership programs. The center is located in 315F of the University Center. (865) 974-2313; e-mail leader@utk.edu

Student Success Center
http://studentsuccess.tennessee.edu

The Student Success Center concept was initiated with the goal of providing a comprehensive service for students who need a place to turn for academic and personal support. The center provides a single source of support to help students sort through services and put them together in a way that meets their needs. In keeping with the “one stop shop” approach, a Virtual Student Success Center (http://studentsuccess.tennessee.edu) is also available. Just like the brick and mortar center, the purpose of the Virtual Center is to provide not only students, but also faculty, staff and parents with a wealth of easy to access information designed to promote student success. The Virtual Student Success Center provides information and resources in the areas of academic advising, tutoring and academic support, service and community, student life, and the academic review or academic probation program and process.

The Student Success Center offers two locations on campus. Students seeking academic support may visit either facility. In addition to providing general academic support for all undergraduate students, the 1817 Melrose Avenue location houses the following programs: Pathways Learning Community, Academic Appeals, and Readmission Appeals. The 812 Volunteer location also provides general academic support and serves as the home to: First Year Studies, UT LEAD Program, and Supplemental Instruction. The Thornton Athletics Student Life Center is also associated with the Student Success Center and is located at 1801 Volunteer Blvd.

Phone: SSC-Melrose 946-HELP (4357), SSC-Volunteer 974-6641, e-mail studentsuccess.tennessee.edu. Hours are 8 am – 5 pm Monday – Friday.

First Year Studies

First Year Studies 101: The UT Experience is a one credit hour, graded first-year 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.

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 communities are the Pathways Community, the Honors Community, the Engage Community, the College of Agricultural Sciences and Natural Resources First-Year Student Community, the Baker 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 Student Success Center office works specifically with the Pathways Community.

Academic Appeals

The Student Success Center assists students with academic problem resolution and works with the Undergraduate Council to assist in the administration of appeals for academic dismissals, university readmission appeals, grade appeals that have gone through the college dean’s level, and late withdrawal appeals for individual courses. The forms needed for the various academic appeals are located on the Student Success Center’s Web site http://studentsuccess.tennessee.edu.

UT LEAD Program

The LEAD Program promotes academic excellence and undergraduate success through a support program for students who have been awarded the Tennessee Promise and/or Tennessee Promise Scholarships and for continuing African-American Achiever and African-American Incentive Grant awardees. The students participate in special academic counseling programs, first-year seminars, leadership development programs, academic success workshops, and other UT learning opportunities.
Supplemental Instruction
Supplemental Instruction (SI) offers free, out of class, study sessions for traditionally difficult courses. Attendance at sessions is voluntary. It is a chance to work together with students in the same class to compare notes, practice problems, discuss important concepts, develop strategies for studying the subject, and to take practice quizzes and exams. Each SI session is facilitated by a student who has successfully completed the course and is trained in collaborative learning strategies. SI sessions are offered for those enrolled in Mathematics 119, 130 and Chemistry 120, 130.

Thornton Athletics Student Life Center
The Thornton Center is a comprehensive academic support center for student-athletes. The Center houses study halls, a computer lab, and writing and math labs. Academic counselors meet regularly with the student-athletes to assess and evaluate their academic plans and NCAA progress towards degree requirements. In addition, the CHAMPS/Life Skills program offers programs that emphasize career development, leadership skills, community service and personal development.

Veteran’s Education Benefits
http://registrar.utk.edu/veterans_affairs.shtml
Veterans, reservists, and widows or children of certain deceased or disabled veterans, who have been admitted to a degree program, may apply for benefits by contacting the Veterans Affairs Office in room 209, Student Services Building.

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 fourteen 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.

Students who are called to active military duty during a term of enrollment should contact the Office of the University Registrar for assistance with withdrawal and readmission procedures.

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. Information is available on a variety of topics including domestic violence, rape, sexual assault, and health issues. 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 e-mail wcc@utk.edu.

Writing Center
http://web.utk.edu/~english/writing/writing.shtml
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 texts. A variety of reference and writing instruction materials are available for use, as well as computers for those who are working with the Writing Center tutors.

Students enrolled in English 101 or 102 may enroll in English 103 or 104, individualized writing workshop courses that meet in the Writing Center, for one hour of elective (S/NC) 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 Commons at Hodges Library. Call for the specific hours each semester, or e-mail writingcenter@utk.edu.

UNIVERSITY OUTREACH AND CONTINUING EDUCATION
www.outreach.tennessee.edu

The University of Tennessee, Knoxville, is committed to its land-grant mission of public service. The institution meets that mission by extending its continuing education services and programming resources through outreach initiatives. University Outreach and Continuing Education works with academic departments to offer courses, educational services and programs. The division offers programs using a variety of modes, helping people of all ages achieve degrees and certificates, accomplish professional development goals, and pursue intellectual and self-improvement interests.

Programs and courses are based upon student needs and desires, whether for self-motivated learning; for leisure and recreational programs; or for professional promotion, certification, licensure, re-licensure, or mid-career changes. The division provides these opportunities through program coordination and development of the four departments: Department of Conferences, Department of Distance Education and Independent Study, English Language Institute, and Professional and Personal Development.

Department of Conferences
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 at www.outreach.tennessee.edu/conferences.

University Conference Center
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. The University Conference Center is located at 600 Henley Street in downtown Knoxville.
English Language Institute

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.

The curriculum consists of eight proficiency levels: 101-108. Introductory through Pre-Academic.

Classes meet 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.

ELI also offers on- and off-campus classes for professional and academic audiences.

Additional information may be obtained at www.outreach.tennessee.edu/eli.

Department of Professional and Personal Development

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.

Additional information may be obtained at www.outreach.utk.edu/ppd.

Department of Distance Education and Independent Study

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.

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 anywhere.tennessee.edu.

ADVANCED STUDIES

The Graduate School

Carolyn R. Hodges, Vice Provost and Dean
S. Kay Reed, Assistant to the Dean
Jennifer Spirko, 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 School Web site http://gradschool.utk.edu.

College of Law

John L. Sobieski, Jr., Interim Dean
Douglas A. Blaze, Interim Associate Dean for Academic Affairs
Katrice W. Jones Morgan, Interim Assistant Dean of Students
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 March 1 of the year of requested admission.

College of Veterinary Medicine

Michael J. Blackwell, Dean
James J. Brace, Associate Dean, Academic Programs
Robert N. Moore, Associate Dean, Research and Graduate Programs
Robert C. DeNovo, Jr., Associate Dean, Hospital Administration and Clinical Programs
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. 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 October 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.
STUDENT RIGHTS AND RESPONSIBILITIES

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

Students are responsible for being fully acquainted with the university catalog, handbook, and other regulations pertaining to students and for complying with them in the interest of an orderly and productive community. The student handbook, Hilltopics, is published and distributed annually and is also available online at the Dean of Students’ Web site (http://dos.utk.edu/hilltopics) so that students are aware of the university Standards of Conduct and all disciplinary regulations and procedures. Since conduct and actions will be measured on an adult standard, students should understand that they assume full responsibility for the consequences of their actions and behavior. The academic community will be judged in large measure by the actions of its members. Therefore, it is incumbent upon students to include the implications for their community in their criteria for determining appropriate behavior.

The responsibility to secure and to respect general conditions conducive to the freedom to learn is shared by all members of the academic community. The student handbook, Hilltopics, is published and distributed annually and is also available online at the Dean of Students’ Web site (http://dos.utk.edu/hilltopics) so that students are aware of the university Standards of Conduct and all disciplinary regulations and procedures. Since conduct and actions will be measured on an adult standard, students should understand that they assume full responsibility for the consequences of their actions and behavior. The academic community will be judged in large measure by the actions of its members. Therefore, it is incumbent upon students to include the implications for their community in their criteria for determining appropriate behavior.

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

ACADEMIC ADVISING AT THE UNIVERSITY OF TENNESSEE, 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, students are asked to indicate whether they have 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 Probation 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 now available on the Web at http://DARSWEB.utk.edu. DARS audits are also available in the advising center and/or the dean’s office of each college and in the Office of the University Registrar, 209 Student Services Building. Students should contact the Office of the University Registrar with any difficulties in accessing DARSweb.

For questions pertaining to the content of their DARS audit, students should contact their advisor or advising office. 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

Academic success is built upon regular class attendance. At the University of Tennessee, students are expected to attend all of their scheduled classes.

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 and twelve at the upper division 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 (See Appeals Procedure outlined below). 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.” 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.

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 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 reason to believe that any of the four conditions do apply, then the 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 department’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.

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. The student may forward to the Assistant Vice Provost for Academic Affairs 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 The Student Success Center, Attention Appeals Committee; 1817 Melrose Ave.; University of Tennessee; Knoxville, TN 37996-3707.

The Assistant Vice Provost for Academic Affairs, after consulting with the student and the college office to determine that the appeal does in fact fall under the jurisdiction of the Undergraduate Council and has been brought forward in the proper form, will, first, forward the appeal to the Appeals Committee of the Undergraduate Council for review and, second, notify the dean, the department head, the course instructor, and the student that the Appeals Committee has the case under review. Upon receipt of the appeal, the chairperson of the Appeals Committee will call a special meeting of the committee for purposes of hearing the appeal. The chair will invite the student, the instructor, and the department head to appear in person if they choose or to supply a written statement (in the student’s case this statement will already have been provided). The committee will maintain minutes 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 does not change the grade, 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 student, the instructor may either elect to change the grade to a higher grade or refuse to do so. If the instructor refuses to change the grade, the chancellor 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, alumni, 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 receiving a bachelor’s degree must have completed one unit of American history on the high school level or 6 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, also known as the Buckley Amendment, gives four basic rights to students.

- The right to review their education records.
- The right to seek to amend their education records.
- The right to limit disclosure of personally identifiable information (directory information).
- The right to notify the Department of Education concerning an academic institution’s failure to comply with FERPA regulations.

FERPA provides for confidentiality of student records; however, it also provides for basic identification of people at the University of Tennessee without the consent of the individual. Release of information to third parties includes directory information, such as contained in the campus telephone book, in the online Web-based people directory, and in sports brochures. Directory information includes, but is not limited to, student name, local and permanent address, Net ID, university e-mail address, telephone number, classification, graduate or undergraduate levels, full time or part-time students, college, major, dates of attendance, degrees and awards, the most recent previously attended educational institution, participation in school activities and sports, and height and weight (for special activities). Students are notified of their FERPA rights and the procedures for limiting disclosure of directory information in Hilltopics, at Orientation for new students, and on the Web site of the University Registrar http://registrar.tennessee.edu/records/privacy.shtml.
Social Security Number Use

The University of Tennessee, Knoxville, requires the assignment of a unique student number for internal identification of each student’s record. 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 business or access their records. The university is in the process of converting all currently enrolled student records to generated student identification numbers.

Student identification numbers are used for university business only. The university complies with FERPA guidelines 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 academic programs, periodic measurements of student perceptions and intellectual growth must be obtained. Graduating seniors 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 experience for future generations of students.

Senior General Education Test

The Tennessee Higher Education Commission (THEC) requires that each public institution for higher learning evaluate the general education skills of the senior class. Each year a percentage of the seniors are selected to take the test. The test results enable the University of Tennessee to evaluate 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 departments 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 Thornton Athletics 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 – 325 Morgan Hall
- Art Education – 1715 Volunteer Boulevard, 213 Art and Architecture Building
- Music Education – 1741 Volunteer Boulevard, 211A Music Building
- School Counseling – A525 Jane and David Bailey Education Complex
- School Psychology – A525 Jane and David Bailey Education 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 19 subject areas. The tests are usually taken by high school students during their junior or senior year.

Disciplines at UT Knoxville which grant advanced placement credit for satisfactory test scores include art, biology, chemistry, computer science, economics, English, French, geography, geology, German, history, Latin, mathematics, music, physics, political science, psychology, Spanish, and statistics. Each participating department decides the acceptable score for credit. Information may be obtained from http://admissions.utk.edu/undergraduate/ap.shtml 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. Each participating department decides the acceptable score for credit. Information may be obtained from http://admissions.utk.edu/undergraduate/ap.shtml 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 Programs at the University of Tennessee

Several honors options are available. The Chancellor’s Honors Program is available to entering freshmen and a limited number of transfer and sophomore students. For a description of this program please see Chancellor’s Honors.

Some colleges have college-wide honors programs. In the Col-
College of Agricultural Sciences and Natural Resources, see the CASNR Honors Research and Creative Achievements Program; in Arts and Sciences, see the College Scholars major; and in the College of Business Administration, see the Global Leadership Scholars Program.

Many academic departments have honors programs. All of these programs require that at least 12 hours of honors courses be used in satisfaction of degree requirements and some departments may require more. A senior research project or thesis is a requirement and a cumulative GPA of at least 3.25 is required for award of the honors degree. For specific requirements see individual program degree requirements.

Courses designated as honors courses are available to all students with requisite ACT/SAT scores and previous acceptable academic performance. Please see specific course descriptions for the requirements for registration.

Chancellor’s Honors students, College Scholars, and students participating in a departmental or college-level honors program at UT Knoxville are eligible to complete an Honors-by-Contract, which is a customized approach in an upper-division course in the student’s academic major, through completion of a written contract delineating additional effort. See http://honors.utk.edu/ for details on the contract.

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 the Graduate School, 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 (3.00) 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.

- Only students working toward a first bachelor’s degree are eligible.
- Students who have met all requirements for graduation are not eligible.
- Approval must be obtained each semester at the Graduate School, P-105 Andy Holt Tower; (865) 974-2475. Form available online at http://gradstudies.tennessee.edu.
- A maximum of 9 hours of graduate credit at the 400- and 500-level can be obtained in this status.
- Some departments do not permit seniors to register for graduate courses without prior permission.
- Courses taken for graduate credit may not be used for both the baccalaureate and a graduate degree program except in the case of approved dual bachelor’s/master’s programs.

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

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

### Classification of Undergraduate Students by Semester Hours Passed

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

#### All Programs except Architecture

<table>
<thead>
<tr>
<th>Year</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>First</td>
<td>0-31.9</td>
</tr>
<tr>
<td>Second</td>
<td>32-63.9</td>
</tr>
<tr>
<td>Third</td>
<td>64-95.9</td>
</tr>
<tr>
<td>Fourth</td>
<td>96-127.9</td>
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<tr>
<td>Fifth</td>
<td>128-up</td>
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</tbody>
</table>

#### Architecture

<table>
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<tr>
<th>Year</th>
<th>Hours</th>
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<tr>
<td>First</td>
<td>0-31.9</td>
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<td>Fourth</td>
<td>96-127.9</td>
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<tr>
<td>Fifth</td>
<td>128-up</td>
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</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.

- A senior may take only 6 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.

¹ Correspondence credits are not accepted for students enrolled in the College of Law, or except by prior permission, for students in the Center for Health Sciences.
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 curricular 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) by the college staff.

University General Education Requirement

- 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) by the college staff.

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 (212 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 2 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, WP, and WF 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>4.00</td>
</tr>
<tr>
<td>A-</td>
<td>Intermediate Grade</td>
<td>3.70</td>
</tr>
<tr>
<td>B+</td>
<td>Very Good</td>
<td>3.30</td>
</tr>
<tr>
<td>B</td>
<td>Good</td>
<td>3.00</td>
</tr>
<tr>
<td>B-</td>
<td>Intermediate Grade</td>
<td>2.70</td>
</tr>
<tr>
<td>C+</td>
<td>Fair</td>
<td>2.30</td>
</tr>
<tr>
<td>C</td>
<td>Satisfactory</td>
<td>2.00</td>
</tr>
<tr>
<td>C-</td>
<td>Unsatisfactory</td>
<td>1.70</td>
</tr>
<tr>
<td>D+</td>
<td>Unsatisfactory</td>
<td>1.30</td>
</tr>
<tr>
<td>D</td>
<td>Unsatisfactory</td>
<td>1.00</td>
</tr>
<tr>
<td>D-</td>
<td>Unsatisfactory</td>
<td>.70</td>
</tr>
<tr>
<td>F</td>
<td>Failure</td>
<td>0.00</td>
</tr>
</tbody>
</table>

Note: WP and WF carry no quality points or credit hours.

Freshman English

English 101, 102, 118, 131, and 132 are offered on a system of A, A-, B+, 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.
- 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 11th and 63rd 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 63rd calendar day of classes and is passing the course at the time of withdrawal.
- WF (Withdrawn Failing) is assigned in courses when a student withdraws from a course after the 63rd calendar day of classes and is failing 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 grades of C-, D+, D, D-, and F.
- 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, A-, B+, B, B-, C+, C, C-, D+, D, D-, and F).
- If the student elects non-conventional grading, grades of A-, B+, B, B-, C+, C, will be recorded on the student’s permanent academic record as S, and C-, D+, D, 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. In the case where a student earned a grade of C-, D+, D, or D- in the course and subsequently repeats the course with a failing grade (F), the grade of D 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. Repeating a course in which an NC grade has been earned does not count as one of the repeats covered by this policy. Grades of W, WP, and WF do not count as one of the repeats covered by this policy. 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 attempted more than three times. A grade of W does not count as one of the available attempts. Grades of C-, D+, D, D-, F, I, NC, WP, and WF are counted as one of the available attempts. 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 from the head of the department where the course is being offered and the student’s college dean or designer. 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 Session
Undergraduate students may enroll in one course during mini session which is part of summer term. Enrollment that exceeds the maximum must be approved by the dean of the student’s college.

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

Auditing Courses
Students may enter classes as auditors with the consent of the instructor. The instructor will determine the appropriate requirements or restrictions. Auditors receive no credit and the audited course will not be recorded on the transcript. The student’s name will appear on the class roll to inform the instructor that the student is properly enrolled as auditor.
Students 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 Add Course (Change of Registration) form and having it processed in the Office of the University Registrar, 209 Student Services Building. After the add deadline, the signature of the dean or designee of the student’s college or school 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 day until the 63rd 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 63rd 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.
- After the 84th day, no drops are permitted.
- The periods for add, drop, change of grading for 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 Web site at http://cpo.utk.edu. Deadline dates may be adjusted 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.

Students who are called to active military duty during a term of enrollment should contact the Office of the University Registrar for assistance with withdrawal and readmission procedures.

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.

ACADEMIC STANDING

The University of Tennessee, Knoxville, expects all students who enter to make progress toward graduation. To graduate from UT Knoxville, a student must earn a minimum cumulative grade point average (GPA) of 2.00. The university reviews students’ academic records at the end of each term to determine academic standing. The catalog contains additional requirements for specific programs.

Good Academic Standing

A student is in good academic standing when both the student’s term and cumulative GPAs are 2.00 or higher or, if after two consecutive terms, the student’s cumulative GPA is 2.00 or higher and at least one term GPA is also 2.00 or higher.

Academic Probation

A student will be placed on Academic Probation when (1) his/her cumulative GPA falls below the minimum acceptable level of 2.00 for one semester or (2) the semester GPA falls below the minimum acceptable level of 2.00 two consecutive terms of enrollment. During the semester that a student is placed on Academic Probation, and any other semesters in Academic Probation, a student must participate in a special directive advising program to help the student address concerns that are impacting his/her academic performance, and to outline a plan for achieving academic success. This model of early intervention is designed to help students re-group and position themselves for academic success.

Students on Academic Probation status during a term will automatically be dismissed at the end of that term if both:

- The cumulative GPA is below 2.00, and
- The term GPA is below 2.00

A student will no longer be on academic probation when his or her cumulative grade point average is 2.00 or higher and the term grade point average is 2.00 or higher. This policy is in place in recognition of the University of Tennessee, Knoxville’s minimum grade point average of 2.00 for graduation.

Academic Dismissal

Academic dismissal is the end result of a pattern of receiving grades that are below the university’s standards for good academic standing (GPA of 2.00 or better).

Students who have been academically dismissed are not eligible to enroll in classes, either full-time or part-time at the University of Tennessee (including correspondence and on-line courses). Academically dismissed students are not permitted to live in university housing and no longer have the privileges provided through the UT student identification card (VolCard). Academically dismissed students must remain away from the university for a mandatory absence and should use the period of dismissal to reflect on and address the factors that led to poor performance.

- First Academic Dismissal
  A student dismissed for the first time may not be readmitted until after a full semester (not including summer) has elapsed.

- Second Academic Dismissal
  A student dismissed for the second time may be readmitted after one calendar year has elapsed and after completing a minimum of 12 semester credits of academic coursework with at least a 2.50 cumulative grade point average
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 2.50 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 and every term thereafter until the cumulative GPA reaches a 2.00. For further information on readmission after academic dismissal, see Readmission to the University under the Admission to the University section of this catalog.

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:

- 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. In-
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 when application is made for the second degree.

Students are able to enroll in additional post-baccalaureate coursework in lieu of pursuing a second baccalaureate degree. Students are further encouraged to pursue graduate studies toward an advanced degree. Once a bachelor’s degree has been awarded, a student may not add a second bachelor’s degree in the same major as the first bachelor’s degree even if the student wants to pursue a different concentration in that major. A student may not receive a second bachelor’s degree in a major that has already been awarded as a minor in a first bachelor’s degree.

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.

Chancellor’s Honors are conferred upon graduating students who have completed the Chancellor’s Honors Program.

Second Majors and Minors

Students may pursue any available minors or second majors. Second minors and majors will be noted on students’ transcripts upon graduation. Meeting the requirements of minors or second majors may lengthen students’ academic programs. Once a bachelor’s degree has been awarded, students may not add a second major or minor to that degree.
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 Tennessee Agricultural Experiment Station, UT Extension, 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 Tennessee 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.

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**

- Agriculture and natural resource leadership, education and communications with concentrations in agricultural science, agricultural leadership, agricultural education and agricultural extension education (interdepartmental unit).
- Animal science with concentrations in production/business/communications, 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 Soil Science).
- Environmental and soil sciences with concentrations in agricultural systems technology, environmental science, and soil science (Department of Biosystems Engineering and Soil Science).
- Food and agricultural business with a concentration in agricultural equipment systems management (Department of Agricultural Economics).
- 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).
- Natural resource and environmental economics (pending THEC approval) (Department of Agricultural Economics).
- Plant sciences with concentrations in bioenergy, biotechnology, horticulture science and production, landscape design and construction, public horticulture, and 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 and is NCATE accredited.

A pre-veterinary medicine curriculum is offered in the college. This program is designed to prepare students for admission to the College of Veterinary Medicine located on the Knoxville campus. The pre-professional program in food science and technology allows students to be awarded a Bachelor of Science 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 2.00.

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 college dean’s office 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 2.00 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 a 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 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 from Communication Studies 210 or 240 or a course with an (OC) designation from the university-approved list.
- Quantitative Reasoning – two courses from a two-course mathematics sequence or one mathematics course and one course with a (QR) designation from the university-approved list.
- Social Sciences – two courses from the university-approved list.
- Biological Sciences – two courses, minimum 6 hours, one course may be a College of Agricultural Sciences and Natural Resources course.
- Physical Sciences – two courses, minimum 6 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 from 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 a 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 9 of the credit hours required for the minor must be completed at the Knoxville campus. Each department offering a minor lists specific requirements. Minors offered in the College of Agricultural Sciences and Natural Resources are open to students of any other college 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**

- Animal science (Department of Animal Science).
- Biosystems engineering technology (Department of Biosystems Engineering and Soil Science).
- Entomology and plant pathology (Department of Entomology and Plant Pathology).
- Environmental and soil sciences (Department of Biosystems Engineering and Soil Science).
- Food and agricultural business (Department of Agricultural Economics).
- Food science and technology (Department of Food Science and Technology).
- Forestry (Department of Forestry, Wildlife and Fisheries).
- International agriculture and natural resources (Office of the Dean).
- 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 Associate 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 point average of 3.25. Additionally, once a student is admitted to the program, he/she must maintain a GPA of 3.25 or above. Students will be invited by the college to participate in the program the first semester they are eligible and once per academic year thereafter. Students must apply for the program and be approved by a College Honors Committee. This application includes details of the proposed research, teaching or extension project. Upon admission, the student can enroll in Agriculture and Natural Resources 497, Honors Project (repeatable for a maximum of 6 hours), or departmental independent study credit. The student should enroll during the semester(s) that he/she is actively working on the project. Some departments may elect to allow some or all of this credit to count toward graduation requirements. Upon completion of their work, students must enroll in Agriculture and Natural Resources 498, Honors Presentations (1). Students prepare a written report and give an oral presentation to the Committee and interested individuals.

Participation in and completion of a CASNR Honors Research and Creative Achievements project will be noted on the student’s university transcript as follows: College of Agricultural Sciences and Natural Resources Honors and Creative Achievements Program participant. More detailed information is available from the college dean’s office.

**Course Load**

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

**Transfer Students**

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

**DEPARTMENT OF AGRICULTURAL ECONOMICS**

http://economics.ag.utk.edu/

Dan L. McLemore, Head

**Professors**

Cross, T.L., PhD ........................................ Oregon State

English, B.C., PhD ........................................ Iowa State

Garland, C.D., PhD ........................................ Tennessee

Gerloff, D.G., PhD ........................................ Texas A&M

Jensen, K.L., PhD ......................................... Oklahoma State

Klindt, T.H., PhD ......................................... Kentucky

McLemore, D.L., PhD .................................... Clemson

Orr, R.H., PhD ............................................. Illinois

Park, W.M., PhD ........................................ Virginia Tech

Rawls, E.L., PhD ........................................ Virginia Tech

Ray, D.E., PhD ............................................. Iowa State

Riley, J.B., PhD ........................................... Oklahoma State

Roberts, R.K., PhD ....................................... Iowa State

Smith, G.F., PhD ......................................... Tennessee

**Associate Professors**

De La Torre Ugarte, D.G., PhD ....................... Oklahoma State

Larson, J.A., PhD ......................................... Oklahoma State

Yen, S.T., PhD ............................................ Minnesota

**Assistant Professors**

Bazen, E.F., PhD .......................................... Kentucky

Cho, S.H., PhD ............................................ Oregon State

Clark, C.D., PhD ........................................... Vanderbilt

Lambert, D.M., PhD ...................................... Purdue

Tiller, K.H., PhD .......................................... Tennessee

Veloxia, M., PhD .......................................... Texas Tech

Wilcox, M.D., PhD ....................................... Purdue
FOOD AND AGRICULTURAL BUSINESS MAJOR

Advisors
McLemore, Park, and Riley

Students majoring in food and agricultural business are prepared for a wide variety of career opportunities. The focus of their studies is on the functioning of the agri-food sector in the global economic system and the economic principles for decision making by business managers, consumers, policymakers and others within the sector. Students complete a curriculum designed to provide them with a broad-based education and the specialized skills necessary for a successful career in the agri-food 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 customize their program by selecting among upper-division electives within the department. General elective hours in the curriculum 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 food and agricultural business have many career options. Many graduates take positions in management or marketing with businesses involved in the farm input supply sector. This would include large multinational corporations that manufacture inputs such as machinery, chemicals, and feed, as well as local retailers of such items. Other graduates manage operations involved in the production of agricultural commodities or the processing of food products. Graduates also find career opportunities with food distribution and retailing companies serving as managers, marketing representatives, or in areas of customer service and public relations. Graduates are employed 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 agri-food industry. Graduates also find themselves well prepared for graduate study in agricultural economics or agribusiness management, as well as for professional programs such as law.

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

First Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural Economics 110</td>
<td>3</td>
</tr>
<tr>
<td>Nutrition 100*</td>
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</tr>
<tr>
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<tr>
<td>2Cultures and Civilizations Elective*</td>
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<tr>
<td>English 101*, 102*</td>
<td>6</td>
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<tr>
<td>Mathematics 123*, 125*</td>
<td>6</td>
</tr>
<tr>
<td>Psychology 110* or Political Science 102* or Sociology 120*</td>
<td>3</td>
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</tbody>
</table>

Second Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accounting 200</td>
<td>3</td>
</tr>
<tr>
<td>Agricultural Economics 212</td>
<td>3</td>
</tr>
<tr>
<td>Economics 201*</td>
<td>4</td>
</tr>
<tr>
<td>Food Science and Technology 101 or 150</td>
<td>3</td>
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<tr>
<td>Agricultural and Natural Resources 290</td>
<td>3</td>
</tr>
<tr>
<td>Philosophy 243*</td>
<td>3</td>
</tr>
<tr>
<td>3Physical Sciences Electives*</td>
<td>8</td>
</tr>
<tr>
<td>Statistics 210*</td>
<td>3</td>
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</table>

Third Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural Economics 310, 320, 324, 342, 350, 412</td>
<td>16</td>
</tr>
<tr>
<td>Agricultural Extension Education 440* or English 360* or Journalism and Electronic Media 201*</td>
<td>3</td>
</tr>
<tr>
<td>4Nondepartmental CASNR Electives</td>
<td>6</td>
</tr>
<tr>
<td>Communication Studies 210* or 240*</td>
<td>3</td>
</tr>
<tr>
<td>2Arts and Humanities Electives</td>
<td>3</td>
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Fourth Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural Economics 410, 442</td>
<td>4</td>
</tr>
<tr>
<td>5Agricultural Economics Electives</td>
<td>12</td>
</tr>
<tr>
<td>Any 300-level Economics course</td>
<td>3</td>
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<tr>
<td>4Nondepartmental CASNR Electives</td>
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</tr>
<tr>
<td>Free Electives</td>
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</table>

Total 120

* Meets University General Education Requirement.
1 Selected from Biology 101, 102, 130, 140.
2 Selected from any course on the University General Education list.
3 Selected from Chemistry 100, 110, 120, 130, Geography 131, 132, Geology 101, 102, 103, ESS 210.
4 Selected from any CASNR course with the following exceptions: (1) if Environmental and Soil Science 120 or 220 or Agricultural and Extension Education 440 are used to meet other requirements, they may not be used to meet this requirement; and (2) no more than three credit hours can be used from Animal Science 360 and 461.
5 A maximum of 3 credit hours can be used from each of the following courses: Agricultural Economics 356, 492 and 493.

AGRICULTURAL EQUIPMENT SYSTEMS MANAGEMENT CONCENTRATION

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

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

Requirements for the Bachelor of Science in Agriculture • Food and Agricultural Business Major • Agricultural Equipment Systems Management Concentration

First Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural Economics 110</td>
<td>1</td>
</tr>
<tr>
<td>Biology 111*, 112*</td>
<td>8</td>
</tr>
<tr>
<td>1Cultures and Civilizations*</td>
<td>6</td>
</tr>
<tr>
<td>English 101*, 102*</td>
<td>6</td>
</tr>
<tr>
<td>Mathematics 123*, 125*</td>
<td>6</td>
</tr>
<tr>
<td>Agricultural and Natural Resources 290</td>
<td>3</td>
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Second Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
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</thead>
<tbody>
<tr>
<td>Accounting 200</td>
<td>3</td>
</tr>
<tr>
<td>Agricultural Economics 212</td>
<td>3</td>
</tr>
<tr>
<td>Economics 201*</td>
<td>4</td>
</tr>
<tr>
<td>Biosystems Engineering Technology 202</td>
<td>3</td>
</tr>
<tr>
<td>Chemistry 120*</td>
<td>4</td>
</tr>
<tr>
<td>Philosophy 243*</td>
<td>3</td>
</tr>
<tr>
<td>Physics 161*</td>
<td>3</td>
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<tr>
<td>Environmental and Soil Sciences 210</td>
<td>4</td>
</tr>
<tr>
<td>Statistics 210*</td>
<td>4</td>
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</table>

Third Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural Economics 310, 320, 324, 342, 350, 412</td>
<td>16</td>
</tr>
<tr>
<td>Agricultural Extension Education 440* or English 360* or Journalism and Electronic Media 201*</td>
<td>3</td>
</tr>
<tr>
<td>1Arts and Humanities Elective*</td>
<td>3</td>
</tr>
<tr>
<td>Communication Studies 210* or 240*</td>
<td>3</td>
</tr>
<tr>
<td>Psychology 110* or Political Science 102* or Sociology 120*</td>
<td>3</td>
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Fourth Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural Economics 410, 442</td>
<td>4</td>
</tr>
<tr>
<td>2Agricultural Economics Electives</td>
<td>9</td>
</tr>
<tr>
<td>Biosystems Engineering Technology 432, 442, 452, 462</td>
<td>12</td>
</tr>
<tr>
<td>Any 300-level Economics course</td>
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</tbody>
</table>

Total 122

* Meets University General Education Requirement.
1 Choose any course from University General Education list.
Agricultural Economics 110  . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .1
• Natural Resource and Environmental Economics Major
  strong background for graduate studies in natural resource and also provide opportunities for employment. The major provides a the Environmental Protection Agency and the departments of assistance in meeting environmental objectives. Many non-private firms with environmental compliance activities or conservation initiatives directed toward energy or other natural private firms with environmental compliance activities or conservation or environmental tradeoffs. Private firms face serious challenges in meeting stricter environmental regulations and achieving self-imposed environmental goals. Public agencies must continually seek to design policies so that society’s resource conservation or environmental quality goals are achieved in a cost-effective manner.
  The curriculum builds upon the university-wide general education requirements with a set of core courses in business and economics. Students then take advanced and specialized course work that focuses on the economic foundations for policies designed to foster natural resource conservation or enhance environmental quality. The curriculum is highly interdisciplinary. Courses are required in the physical and environmental sciences covering subject matter such as conservation, ecology and forestry, as well as soil and water resource issues. Course work is required in environmental ethics, environmental law and other social science disciplines such as sociology. Students gain skills using tools such as geographic information systems for analysis of spatially-referenced data.
  Students graduating with this major may find employment in private firms with environmental compliance activities or conservation initiatives directed toward energy or other natural resources. Opportunities also exist with consulting firms that assist clients in meeting environmental objectives. Many non-profit environmental organizations seek to employ staff with economic training. Several federal government agencies, including the Environmental Protection Agency and the departments of Agriculture, Interior and Energy, employ natural resource and environmental economists. State and local government agencies also provide opportunities for employment. The major provides a strong background for graduate studies in natural resource and environmental economics, leading to career opportunities in teaching and/or research, as well as high-level policy positions. Students would also be well prepared to pursue a professional program in environmental law.

Requirements for the Bachelor of Science in Agriculture
• Natural Resource and Environmental Economics Major
  Students in the agricultural education and agricultural extension concentration is designed for those interested in agriculture and natural resource leadership, education and communications with concentrations in agricultural science, agricultural leadership, 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 develop their leadership and communication skills to pursue careers in the area of leadership in business and industry, agricultural education, agricultural extension and agricultural communications. The agricultural science concentration is designed for students who want a broad, general background in agriculture and natural resources. The agricultural leadership concentration is designed for students who want to develop their leadership skills and pursue careers in government, youth organizations, trade and breed associations, business/industry, international environments and leadership positions within the community. 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. Students involved in the agricultural science and agricultural leadership concentrations will also select a minor to accommodate their course of study.
  Students in the agricultural education and agricultural exten-
sion education concentrations or one of the minors offered by the College of Communication and Information should follow the appropriate concentration and work with faculty in agricultural and extension education housed in Morgan Hall.

Students who are undecided as to their studies in agriculture and natural resources are advised to follow the agricultural science concentration and explore the different majors available in the college. They should work with their assigned advisor to eventually choose one of the minors offered by CASNR, the College of Communication and Information, or submit an individualized plan of study before the third year, for approval by the advisor and the Office of the Dean.

**AGRICULTURE AND NATURAL RESOURCE LEADERSHIP, EDUCATION AND COMMUNICATIONS MAJOR**

**AGRICULTURAL SCIENCE CONCENTRATION**

**Advisors**
Contact Office of the Dean, College of Agricultural Sciences and Natural Resources

**Requirements for the Bachelor of Science in Agriculture**
- **Agricultural and Natural Resource Leadership, Education and Communications Major**
- **Agricultural Science Concentration**

**First Year**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Agriculture and Natural Resources 100</td>
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<tr>
<td>Agriculture and Natural Resources 290</td>
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<tr>
<td>Animal Science 160</td>
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<tr>
<td>1Chemistry 100*-110* or 120*-130*</td>
<td>1.8</td>
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<tr>
<td>English 101*, 102*</td>
<td>6</td>
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<tr>
<td>Mathematics 113* and Quantitative Reasoning Course*</td>
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</tr>
<tr>
<td>Plant Sciences 115</td>
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**Second Year**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Agricultural and Extension Education 211</td>
<td>3</td>
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<tr>
<td>Agricultural Economics 212</td>
<td>3</td>
</tr>
<tr>
<td>Communication Studies 210* or 240*</td>
<td>3</td>
</tr>
<tr>
<td>2Economics Elective</td>
<td>3.4</td>
</tr>
<tr>
<td>Environmental and Soil Sciences 210</td>
<td>4</td>
</tr>
<tr>
<td>Food Science and Technology 101</td>
<td>3</td>
</tr>
<tr>
<td>3Free Elective</td>
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**Third Year**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural Sciences and Natural Resources Elective</td>
<td>6</td>
</tr>
<tr>
<td>Entomology and Plant Pathology 313 or 321</td>
<td>3</td>
</tr>
<tr>
<td>3Cultures and Civilizations Elective*</td>
<td>3</td>
</tr>
<tr>
<td>3Arts and Humanities Elective*</td>
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<tr>
<td>5Minor</td>
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**Fourth Year**

<table>
<thead>
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<th>Course</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Agricultural Sciences and Natural Resources Electives</td>
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<tr>
<td>3Arts and Humanities Elective*</td>
<td>3</td>
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<tr>
<td>3Cultures and Civilizations Elective*</td>
<td>3</td>
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<tr>
<td>3Free Electives</td>
<td>2-5</td>
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<tr>
<td>5Minor</td>
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</tbody>
</table>

**Total 124**

* Meets University General Education Requirement.

1. Chemistry 130 is a prerequisite/corequisite to Biology 140, therefore a student selects Chemistry 120-130 and Biology 130-140; otherwise the student must elect Chemistry 100-110 and Biology 101-102.

2. Economics 201(4) satisfies the University General Education-Social Sciences requirement and the major requirement for economics. If the student transfers ECON LD for 3 credits, it will satisfy the major requirement, but will not satisfy the General Education-Social Sciences requirement. In these cases, the student should take two courses from the approved General Education-Social Sciences list.

3. One of the University General Education Electives, Agricultural Sciences and Natural Resources Electives, Free Electives or a course taken as part of one of the minors must be a Communicating through Writing (WC) course.

4. Choose from the University General Education lists.

5. Students should select one of the minors offered by the College of Agricultural Sciences and Natural Resources: animal science, biosystems engineering technology, entomology and plant pathology, environmental and soil sciences, food and agricultural business, food science and technology, forestry, international agriculture and natural resources, 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 third year, for approval by the advisor, department head, and the Dean’s Office. If the minor is less than 23 hours, the excess hours will become free electives.

**AGRICULTURAL LEADERSHIP CONCENTRATION**

**Advisors**
Cooper, Fritz

**Requirements for the Bachelor of Science in Agriculture**
- **Agricultural and Natural Resource Leadership, Education and Communications Major**
- **Agricultural Leadership Concentration**

**First Year**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture and Natural Resources 100 or Agricultural and Natural Resource Leadership 101</td>
<td>1</td>
</tr>
<tr>
<td>Agriculture and Natural Resources 102</td>
<td>3</td>
</tr>
<tr>
<td>Agricultural Economics 212</td>
<td>3</td>
</tr>
<tr>
<td>Agriculture and Natural Resources 290</td>
<td>3</td>
</tr>
<tr>
<td>1Chemistry 130*-140* or 101*-102*</td>
<td>8</td>
</tr>
<tr>
<td>Communication Studies 210* or 240*</td>
<td>3</td>
</tr>
<tr>
<td>2Economics Elective</td>
<td>3.4</td>
</tr>
<tr>
<td>Environmental and Soil Sciences 210</td>
<td>4</td>
</tr>
<tr>
<td>Food Science and Technology 101</td>
<td>3</td>
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<tr>
<td>5Minor</td>
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</table>

**Second Year**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Agricultural and Extension Education 211</td>
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<tr>
<td>Agricultural and Natural Resource Leadership 202</td>
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<tr>
<td>Animal Science 220 or Plant Sciences 210</td>
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<tr>
<td>1Chemistry 100*-110* or 120*-130*</td>
<td>8</td>
</tr>
<tr>
<td>Communication Studies 210* or 240*</td>
<td>3</td>
</tr>
<tr>
<td>2Economics Elective</td>
<td>3.4</td>
</tr>
<tr>
<td>Environmental and Soil Sciences 210</td>
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<tr>
<td>Food Science and Technology 101</td>
<td>3</td>
</tr>
<tr>
<td>Plant Sciences 290 or 291</td>
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**Third Year**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural and Natural Resource Leadership 303, 304</td>
<td>6</td>
</tr>
<tr>
<td>Agricultural and Extension Education 440*</td>
<td>3</td>
</tr>
<tr>
<td>Entomology and Plant Pathology 313 or 321</td>
<td>3</td>
</tr>
<tr>
<td>3Cultures and Civilizations Elective*</td>
<td>3</td>
</tr>
<tr>
<td>Social Sciences Elective*</td>
<td>3</td>
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<tr>
<td>3Free Electives</td>
<td>5-6</td>
</tr>
<tr>
<td>5Minor</td>
<td>9</td>
</tr>
</tbody>
</table>

**Total 124**

* Meets University General Education Requirement.

1. Chemistry 130 is a prerequisite/corequisite to Biology 140, therefore a student selects Chemistry 120-130 and Biology 130-140; otherwise the student must elect Chemistry 100-110 and Biology 101-102. Biology 111-112 has no chemistry prerequisite.

2. Economics 201(4) satisfies the University General Education-Social Sciences requirement and the major requirement for economics. If the student transfers ECON LD for 3 credits, it will satisfy the major requirement, but will not satisfy the General Education-Social Sciences requirement. In these cases, the student should take two courses from the approved General Education-Social Sciences list.

3. Choose from the University General Education lists.

4. One of the University General Education Electives, Agricultural Sciences and Natural Resources Electives, Free Electives or a course taken as part of one of the minors must be a Communicating through Writing (WC) course.
Students should select one of the minors offered by the College of Agricultural Sciences and Natural Resources: animal science, biosystems engineering technology, entomology and plant pathology, environmental and soil sciences, food and agricultural business, food science and technology, forestry, international agriculture and natural resources, 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 third year, for approval by the advisor, department head, and the Dean's Office. If the minor is less than 23 hours, the excess hours will become free electives.

**Agricultural Extension Education Concentration**

http://aee.tennessee.edu

**Advisor**

Fritz

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

**Agricultural and Natural Resource Leadership, Education and Communications Major**

**Agricultural Education**

**Waters**

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

**Agricultural and Natural Resource Leadership, Education and Communications Major** • Agricultural Extension Education

**AGRICULTURAL EXTENSION EDUCATION**

**CONCENTRATION**

http://aee.tennessee.edu

**Advisor**

Fritz

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

**Agricultural and Natural Resource Leadership, Education and Communications Major** • Agricultural Extension Education

**Waters**

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

**Agricultural and Natural Resource Leadership, Education and Communications Major** • Agricultural Education

Requirements for the Bachelor of Science in Agriculture

**First Year**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Credit</th>
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<td>1Biology 101*-102* or 130*-140*</td>
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<td>English 101*, 102*</td>
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<tr>
<td>Mathematics 113* and 115*</td>
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**Second Year**

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<td>Agricultural and Natural Resource Leadership 202</td>
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<td>Agricultural Economics 212</td>
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<td>Animal Science 220</td>
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<tr>
<td>2Arts and Humanities Elective*</td>
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<tr>
<td>1Chemistry 100*-110* or 120*-130*</td>
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<tr>
<td>Environmental and Soil Sciences 210</td>
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<td>Plant Sciences 230 and 290 or 291</td>
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**Third Year**

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<tr>
<td>Agricultural and Extension Education 345</td>
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<td>Biosystems Engineering Technology 202 and 452</td>
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<tr>
<td>Educational Psychology 401</td>
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<tr>
<td>Entomology and Plant Pathology 313 or 321</td>
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<td>Forestry, Wildlife and Fisheries 212 or 317</td>
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<td>Plant Sciences 250</td>
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<td>Psychology 110*</td>
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<td>Special Education 402</td>
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<td>2Cultures and Civilizations Elective*</td>
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**Fourth Year**

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<td>Agricultural and Extension Education 440*</td>
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<td>Agricultural and Extension Education 434</td>
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<td><strong>Total 4th Year</strong></td>
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**Total 124**

1. Meetings University General Education Requirement
2. Choose from the University General Education lists.
3. One of the University General Education Electives, Agricultural Sciences and Natural Resources Electives or Free Electives must be a Communicating through Writing (WC) course.

**Minor in International Agriculture and Natural Resources**

The minor in international agriculture and natural resources is intended for students interested in gaining an international perspective to the world’s food, fiber, and natural resources systems.

**Required courses**

<table>
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<tr>
<th>Course</th>
<th>Hours</th>
<th>Credit</th>
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<td>3Select Agriculture and Natural Resources 491 or the 2second course of a foreign language at the intermediate level*</td>
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<tr>
<td>Agriculture and Natural Resources 481</td>
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<tr>
<td>3Select 2 courses from Africana Studies 235*, 236*; Anthropology 130*, 316, 319, or 463; Geography 101*, 102*, 345, 371, or 373; Global Studies 250*; Political Science 365, 370, or 471; Religious Studies 102*; or Sociology 446</td>
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<td>Agriculture and Natural Resources 333</td>
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<tr>
<td>Entomology and Plant Pathology 210*</td>
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<tr>
<td>Environmental and Soil Sciences 120*, 220*, 334, or 442; Forestry, Wildlife and Fisheries 420; or Plant Sciences 250</td>
<td>6</td>
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</table>

**Total 18**

* Meets University General Education Requirement.
1. The international experience is a planned experience in a foreign country, such as a study abroad program, semester abroad, or internship, with approval on a case-by-case basis.
DEPARTMENT OF ANIMAL SCIENCE
http://animalscience.ag.utk.edu/
Alan G. Mathew, Head

Professors
Conatser, G.E., MS .........................................................Kentucky
Godkin, J.D., PhD ...........................................................Massachusetts
Heitmann, R.N., PhD .........................................................Maine
Hopkins, F., DVM ........................................................Tennessee
Kattesh, H.G., PhD .........................................................Virginia Tech
Kirkpatrick, F.D., PhD .........................................................Tennessee
Lane, C.D., PhD ........................................................Tennessee
Mathew, A.G., PhD .........................................................Ohio State
Meadows, D.G., PhD .......................................................Texas A&M
Neel, J.B., PhD ........................................................Tennessee
Oliver, S.P., PhD ........................................................Ohio State
Robbins, K.R., PhD ........................................................Illinois
Rogers, G.W., PhD .........................................................North Carolina State
Saxton, A., PhD ........................................................North Carolina State
Schrick, F.N., PhD .........................................................Clemson
Smith, M.O., Phd ........................................................Ohio State

Associate Professors
Conant, E.J., PhD ........................................................Florida
Grizzle, J.M., PhD ........................................................Florida
Pighetti, G.P., PhD .........................................................Penn State
Wallace, J.C., PhD ........................................................Nebraska

Assistant Professors
Kojima, C.J., PhD ........................................................Missouri
Lin, J., PhD ........................................................Ohio State

Instructor
Fisher, A.E., MS ........................................................Tennessee

Advisors
Fisher, Godkin, Grizzle, Heitmann, Kattesh, Kojima, Pighetti, Robbins, Schrick, Smith, Waller

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.ag.utk.edu/undguide.htm.

ANIMAL SCIENCE MAJOR
PRODUCTION/BUSINESS/COMMUNICATION CONCENTRATION
Requirements for the Bachelor of Science in Animal Science • Animal Science Major • Production/Business/Communication Concentration
First Year
Animal Science 160 .......................................................3
Biology 130*-140* or 101*-102* .......................................3
Chemistry 100*, 110* or 120*, 130* .................................4
English 101*-102* .........................................................6
Mathematics 125* or 141* or 151* and second approved Quantitative Reasoning Course* .....................................6-8
Economics 201* ..............................................................4

Second Year
Animal Science 220, 280* ................................................6
Agriculture and Natural Resources 290 ................................3
Environmental and Soil Sciences 210 .................................4
Economics 201* ..............................................................4

Third Year
Biological Science Restricted Elective ..............................3
Total 72 hours.

Fourth Year
Animal Science 430, 495 ................................................4
Select two courses from: Animal Science 481 or 482, 493 or 494; 485 or 489 .......................................................6
2Business Administration minor (10 credits) or 3Agricultural Economics and Business minor (9 credits) or 4Communication and Information minor (9 credits) ...........................................9-10
Free Electives .................................................................8-11
Total 124

* Meets University General Education Requirement.

1 Courses selected from the University General Education lists. Animal Science 280 satisfies the WC requirement. Animal Science 360 satisfies the OC requirement.
2 Requirements for the business administration minor are Accounting 200 (3); Economics 201 (4); Statistics 201 (3); Business Administration 201 (4); Finance 301 (3); Marketing 300 (3); Management 300 (3). Total 23 hours.
3 Requirements for the agricultural economics and business minor are Economics 201 (4); Accounting 200 (3); Agricultural Economics 212, 342, 350, 412 (12); Agricultural Economics elective (3). Total 22 hours.
4 Requirements for the communication and information minor are Communication and Information 150 (3); select 6 hours from Advertising 250, Communication Studies 201; Information Sciences 102, Journalism and Electronic Media 200 or 275, or Public Relations 270; select 9 hours of 300-level or above from one or more of the following areas: advertising, communication studies, information sciences, journalism and electronic media, or public relations. Total 18 hours.

SCIENCE/TECHNOLOGY CONCENTRATION
Requirements for the Bachelor of Science in Animal Science • Animal Science Major • Science/Technology Concentration
First Year
Animal Science 160 .......................................................3
Biology 130*-140* .........................................................8
Chemistry 120*-130* .....................................................8

2 Second courses of a foreign language at the intermediate level are Arabic 222, Asian Languages 232 or 252, Asian Studies 222 or 242 or 262, Chinese 223, French 212 or 218, German 202, Hebrew 242, Italian 212, Japanese 252, Persian 262, Portuguese 212, Russian 252, or Spanish 212 or 218.

3 One course should correspond with subject matter for the continent of the international experience. If the chosen course appears on the approved University General Education list, it may be used for both the minor and the University General Education Requirement. This selected course should be completed before Agriculture and Natural Resources 491 is taken.

4 Only one 100-level course may be taken as a part of the minor as a prerequisite to other courses in the minor. Any deviations need to be requested via a petition.

1 Requirements for the communication and information minor are Communication and Information 250; Mass Communication 201; Information Sciences 102, Journalism and Electronic Media 200 or 275, or Public Relations 270; select 9 hours of 300-level or above from one or more of the following areas: advertising, communication studies, information sciences, journalism and electronic media, or public relations. Total 18 hours.

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

3 Requirements for the agricultural economics and business minor are Economics 201 (4); Accounting 200 (3); Agricultural Economics 212, 342, 350, 412 (12); Agricultural Economics elective (3). Total 22 hours.

4 Requirements for the communication and information minor are Communication and Information 150 (3); select 6 hours from Advertising 250, Communication Studies 201; Information Sciences 102, Journalism and Electronic Media 200 or 275, or Public Relations 270; select 9 hours of 300-level or above from one or more of the following areas: advertising, communication studies, information sciences, journalism and electronic media, or public relations. Total 18 hours.
College of Agricultural Sciences and Natural Resources

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 as follows:

- 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 be 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 125 or 141 or 151 plus any QR; Animal Science 160 – 3 hours; Animal Science 220 – 3 hours; Animal Science 320 – 3 hours; Animal Science 330 – 3 hours; Animal Science 340 – 3 hours; Animal Science 380 – 3 hours; Agriculture and Natural Resources 290 – 3 hours; Economics 201 – 4 hours; Communication Studies 210 or 240 or Animal Science 360 – 3 hours.

- NOTE: Economics 201 and Communication Studies 210 or 240 will be accepted by the CVM as meeting requirements in Humanities/Social Science category. The remainder must be a Social Science elective, Arts and Humanities electives (6 hours) and Cultures and Civilizations electives (6 hours); one of which must be writing intensive.

- Satisfactory completion of the first two semesters in the College of Veterinary Medicine professional program.

- No later than the first day of the first semester of the student’s first year in the College of Veterinary Medicine, (s)he should contact the Department of Animal Science in order to check on graduation procedures for this program.

- A total of 124 hours must be completed by the end of the first year in the College of Veterinary Medicine.

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

First Year

- Animal Science 160 ........................................................................................................... 3
- Biology 130*-140* ............................................................................................................. 8
- English 101* – 102* ........................................................................................................... 6
- Mathematics 125* or 141* or 151* and second approved 
  Quantitative Reasoning Course ...................................................................................... 6-8
- Chemistry 120*–130* ........................................................................................................ 8

Second Year

- Animal Science 220, 280* ................................................................................................ 6
- Agriculture and Natural Resources 290 ............................................................................. 3
- Communication Studies 210* or 240* or Animal Science 360* ........................................ 3
- Arts and Humanities Elective* ........................................................................................... 3
- Economics 201* ................................................................................................................ 4
- Chemistry 350, 360, and 369 ............................................................................................ 8
- Biology 240 ....................................................................................................................... 4

Third Year

- Biological Science Restricted Elective ................................................................................ 3
- Physics 221*-222* .............................................................................................................. 8
- Arts and Humanities Elective* ........................................................................................... 3
- Cultures and Civilizations Elective* ................................................................................... 3

Fourth Year

- Animal Science 495 ........................................................................................................... 1
- Select two courses from Animal Science 481 or 482; 483 or 484; 485 or 489 ................... 6
- Biological Science Restricted Elective ................................................................................ 3
- Biochemistry and Cellular and Molecular Biology 401 ..................................................... 4
- Cultures And Civilizations Elective* .................................................................................. 3
- Social Science Elective* ...................................................................................................... 3
- Business Elective ................................................................................................................ 5
- Free Electives ..................................................................................................................... 5-7

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Animal Science 160</td>
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<td>3</td>
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<tr>
<td>Biology 130*-140*</td>
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<td>Mathematics 125* or 141* or 151* and second approved</td>
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<td>Chemistry 120*–130*</td>
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<td>Animal Science 220, 280*</td>
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<td>Communication Studies 210* or 240* or Animal Science 360*</td>
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<td>Chemistry 350, 360, and 369</td>
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<td>Biology 240</td>
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<td>Animal Science 320, 330, 340, 380, 395</td>
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<tr>
<td>Physics 221*-222*</td>
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<td>Animal Science 495</td>
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<td>Free Electives</td>
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Total 124

* Meets University General Education Requirement.

Courses selected from University General Education lists. Animal Science 280 satisfies the WC requirement. Animal Science 360 satisfies the OC requirement.

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

First Year

- Animal Science 160 ........................................................................................................... 3
- Biology 130*-140* ............................................................................................................. 8
- English 101* – 102* ........................................................................................................... 6
- Mathematics 125* or 141* or 151* and second approved 
  Quantitative Reasoning Course ...................................................................................... 6-8
- Chemistry 120*–130* ........................................................................................................ 8

Second Year

- Animal Science 220, 280* ................................................................................................ 6
- Agriculture and Natural Resources 290 ............................................................................. 3
- Communication Studies 210* or 240* or Animal Science 360* ........................................ 3
- Arts and Humanities Elective* ........................................................................................... 3
- Economics 201* ................................................................................................................ 4
- Chemistry 350, 360, and 369 ............................................................................................ 8
- Biology 240 ....................................................................................................................... 4

Third Year

- Biological Science Restricted Elective ................................................................................ 3
- Physics 221*-222* .............................................................................................................. 8
- Arts and Humanities Elective* ........................................................................................... 3
- Cultures and Civilizations Elective* ................................................................................... 3

Fourth Year

- Animal Science 495 ........................................................................................................... 1
- Select two courses from Animal Science 481 or 482; 483 or 484; 485 or 489 ................... 6
- Biological Science Restricted Elective ................................................................................ 3
- Biochemistry and Cellular and Molecular Biology 401 ..................................................... 4
- Cultures And Civilizations Elective* .................................................................................. 3
- Social Science Elective* ...................................................................................................... 3
- Business Elective ................................................................................................................ 5
- Free Electives ..................................................................................................................... 5-7

<table>
<thead>
<tr>
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<tr>
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<td>Mathematics 125* or 141* or 151* and second approved</td>
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<td>Chemistry 120*–130*</td>
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<td>Animal Science 220, 280*</td>
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<tr>
<td>Agriculture and Natural Resources 290</td>
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<td>Communication Studies 210* or 240* or Animal Science 360*</td>
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<td>Animal Science 320, 330, 340, 380, 395</td>
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<tr>
<td>Biological Science Restricted Elective</td>
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<td>3</td>
</tr>
<tr>
<td>Physics 221*-222*</td>
<td></td>
<td>8</td>
</tr>
<tr>
<td>Animal Science 495</td>
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<td>Select two courses from Animal Science 481 or 482; 483 or 484; 485 or 489</td>
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<td>Biochemistry and Cellular and Molecular Biology 401</td>
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<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></td>
<td>5-7</td>
</tr>
</tbody>
</table>

Total 124

* Meets University General Education Requirement.

Courses selected from University General Education lists. Animal Science 280 satisfies the WC requirement. Animal Science 360 satisfies the OC requirement.
The Department of Biosystems Engineering and Soil Science offers two undergraduate degree programs – Bachelor of Science in Biosystems Engineering and Bachelor of Science in Environmental and Soil Sciences. Biosystems engineering is a four-year, ABET accredited engineering program emphasizing engineering applications to biological systems. Environmental and soil sciences is a strong science-based program for students interested in environmental science, soil science, and agricultural systems technology. Students in the agricultural systems technology concentration who follow a specific list of pre-approved classes are eligible to sit for the Tennessee Professional Land Surveyor-In-Training exam. Please see http://biosystems.utk.edu/surveying for more details. 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.

In order to provide students with the best advice concerning course selection, general academic success, and career choices, the programs within the Department of Biosystems Engineering and Soil Science require that all undergraduate students meet with their academic advisors every semester before registering for classes.

**BIOSYSTEMS ENGINEERING MAJOR**

**Advisors**

Ayers, Freeland, Hart, Hayes, 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 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 curricula and the individual course descriptions.

Career opportunities for graduates include the design, development, or management of practices that minimize soil erosion and conserve water resources; biological waste treatment systems; safer machinery systems with lower environmental impact and 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\(\frac{1}{2}\) 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. 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 Engineering Cooperative Scholarship Program should consult with their faculty advisor or the head of the Biosystems Engineering and Soil Science Department, (865) 974-7266; e-mail bess@utk.edu.

The biosystems engineering program at the University of Tennessee, Knoxville, has specific educational objectives that follow 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 or graduate placement at the regional and national levels.
- Aware of meeting their own and societal needs consistent with the goals of lifelong learning, professional ethics, and leadership.
- Performing as entry-level engineers or graduate students 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 2.00 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>First Year</th>
<th>Hours Credit</th>
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<tbody>
<tr>
<td>Biosystems Engineering 104</td>
<td>1</td>
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<tr>
<td>Engineering Fundamentals 105, 151, 152, 202</td>
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<tr>
<td>1Chemistry 120*</td>
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<td>1, 2Mathematics 141*, 142*</td>
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<td>1English 101*, 102*</td>
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<tr>
<td>3Cultures and Civilizations Elective*</td>
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<td>Biosystems Engineering 201, 221, 231, 321</td>
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<td>Mechanical Engineering 231, 321, 331</td>
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<td>Mathematics 231, 241</td>
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<td>Microbiology 210*</td>
<td>3</td>
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<td>Environmental and Soil Sciences 210</td>
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<td>5Technical Elective</td>
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* 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.

Total 128

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-medical 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

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<tr>
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<th>Hours Credit</th>
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<td>Engineering Fundamentals 105, 151, 152, 202</td>
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<td>Mechanical Engineering 231, 321, 331</td>
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<td>Microbiology 210*</td>
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<tr>
<td>Environmental and Soil Sciences 210</td>
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<table>
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<tbody>
<tr>
<td>Biosystems Engineering 411, 431, 451</td>
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<td>Chemistry 360, 369</td>
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<table>
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<tr>
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<tr>
<td>Biosystems Engineering 401*, 402, 404, 444</td>
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<td>Economics 201 (Social Sciences Elective)*</td>
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<td>3Arts and Humanities Elective*</td>
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<tr>
<td>3Cultures and Civilizations Elective*</td>
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</table>

* 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.

Minor in Biosystems Engineering Technology

Advisors
Ayers, Freeland, Hart, Wilkerson, Womac, Yoder

No baccalaureate degree program is offered in biosystems engineering technology; however, 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

<table>
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<tr>
<th>Hours Credit</th>
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<tr>
<td>Biosystems Engineering Technology 202 or 412, 326, and 432</td>
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Total 18
ENVIRONMENTAL AND SOIL SCIENCES MAJOR

Advisors
Eash, Essington, Hart, Lee, Logan, Radosovich

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 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 permit a focus on either science or technology. The three concentrations in this program are soil science, environmental science, and agricultural systems technology.

TECHNICAL ELECTIVES FOR SOIL SCIENCE AND ENVIRONMENTAL SCIENCE CONCENTRATIONS

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

Animal Science 220, 280, 320, 330, 380, 381; Biochemistry and Cellular and Molecular Biology 306, 310, 321, 401, 402, 404, 411, 471, 481; Biology 240, 250; Biosystems Engineering Technology (any course not required for the major); Chemistry 230, 310, 319, 320, 329, 350, 360, 369, 430, 439, 471, 481, Ecology and Evolutionary Biology 240, 304, 305, 330, 370, 380, 410, 414, 421, 433, 470, 474, 484, 495; Entomology and Plant Pathology 313, 321, 451; Environmental and Soil Sciences (any course not required for the major); Food Science and Technology 420, 429; Forestry 314, 321; Forestry, Wildlife and Fisheries 250, 312, 313, 317, 410, 412, 420; Geology 101, 102, 131, 132, 310, 334, 410, 411, 412, 413, 415, 434, 436, 439; Geology 102, 103, 201, 202, 203, 310, 345, 370, 381, 450, 455, 485, 486; Management 301, 321, 431, 434, 437, 439; Microbiology 310, 319, 410, 411, 479; Physics 222, Plant Sciences 250, 434, 435, 457, 461; Political Science 300, 330, 340, 402, 430, 431, 440, 442, 470; Public Health 310; Sociology 360, 462, 464, 465; Statistics (any course above 201); University Studies 322.

TECHNICAL ELECTIVES FOR AGRICULTURAL SYSTEMS TECHNOLOGY CONCENTRATION

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

Accounting 200; Agricultural and Extension Education 450; Agricultural Economics 342, 350, 355; Biosystems Engineering Technology 202, 442, 452; Business Administration 201; Entomology and Plant Pathology 325, 410; Environmental and Soil Sciences 442, 444, 462; Industrial Engineering 304, 423; Marketing 300; Plant Sciences 240, 410, 430, 434, 435.

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 new 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.

This degree program has pre-approved educational courses for Tennessee Professional Land Surveyor-In-Training application. For more information, visit http://bioengr.ag.utk.edu/surveying.

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

First Year

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<th>Course</th>
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Second Year

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<td>Agricultural Economics 212</td>
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<td>Agriculture and Natural Resources 290</td>
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<td>Communication Studies 210* or 240*</td>
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<td>Physics 221*</td>
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<td>Statistics 201*</td>
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Third Year

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<tr>
<th>Course</th>
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<tr>
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Fourth Year

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<td>Technical Electives</td>
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</table>

Total 124

* Meets University General Education Requirement.
1 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

<table>
<thead>
<tr>
<th>First Year</th>
<th>Hours</th>
<th>Credit</th>
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<tbody>
<tr>
<td>Biology 130*, 140*</td>
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</tr>
<tr>
<td>Mathematics 151*, 152*</td>
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</table>

| Second Year | | |
|-------------|----------------|
| Agriculture and Natural Resources 290 | | 3 |
| Biochemistry 210* | | 3 |
| Microbiology 210* | | 3 |
| Statistics 201* | | 3 |
| Physics 221* | | 4 |

| Third Year | | |
|-------------|----------------|
| English 295* or 360* or Agricultural and Extension Education 440* | | 3 |
| Biosystems Engineering Technology 326 | | 3 |
| Chemistry 350 or 110* | | 3-4 |
| Environmental and Soil Sciences 201*, 324, 334, 355 | | 10 |
| Philosophy 245* | | 3 |
| Technical Elective | | 3 |

| Fourth Year | | |
|-------------|----------------|
| Agricultural Economics 470 or Economics 462 | | 3 |
| Biosystems Engineering Technology 412 or 474 | | 3 |
| Environmental and Soil Sciences 434, 444, 462 | | 9 |
| Technical Electives | | 9 |
| Free Electives | | 5-6 |

Total 124

* Meets University General Education Requirement.  
1 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 soil and water conservation issues, land use problems, waste disposal, and reclamation of disturbed lands. Other areas of interest can be addressed through the appropriate selection of technical electives in the program. Students in this program will gain the practical knowledge necessary to compete for career opportunities in government, environmental consulting firms, public health services, environmental research laboratories, and agricultural production, while also gaining the theoretical training necessary for continuing on for advanced degrees in a number of environmentally related fields.

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

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<th>First Year</th>
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<td>Biology 130*, 140*</td>
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<tr>
<td>Mathematics 151*, 152*</td>
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</table>

| Second Year | | |
|-------------|----------------|
| Agriculture and Natural Resources 290 | | 3 |
| Arts and Humanities Elective* | | 3 |
| Environmental and Soil Sciences 210* | | 4 |
| Geology 101* | | 4 |

| Third Year | | |
|-------------|----------------|
| Environmental and Soil Sciences 201*, 324, 334, 355 | | 10 |
| Philosophy 245* | | 3 |
| Technical Electives | | 3 |
| Physical Sciences Elective* | | 3 |
| Environmental and Soil Sciences 434, 442, 444, 462 | | 12 |
| English 295* or 360*, or Agricultural and Extension Education 440* | | 3 |

Total 19

### Department of Entomology and Plant Pathology

http://eppserver.ag.utk.edu

Carl J. Jones, Head

**Professors**

<table>
<thead>
<tr>
<th>Name</th>
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<tbody>
<tr>
<td>Bernard, E.C.</td>
<td>Georgia</td>
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<tr>
<td>Bost, S.C.</td>
<td>North Carolina State</td>
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<tr>
<td>Burgess, E.E.</td>
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<tr>
<td>Gerhardt, R.R.</td>
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<td>Jones, C.J.</td>
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<tr>
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<tr>
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<td>Texas A&amp;M</td>
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<tr>
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**Associate Professors**

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<tr>
<td>Hajimorad, M.</td>
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</tr>
<tr>
<td>Ownley, B.H.</td>
<td>North Carolina State</td>
</tr>
<tr>
<td>Moulton, J.K.</td>
<td>Arizona</td>
</tr>
</tbody>
</table>

**Assistant Professors**

<table>
<thead>
<tr>
<th>Name</th>
<th>Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gerhardt</td>
<td></td>
</tr>
</tbody>
</table>

Courses in economic entomology, diseases and insects 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 Code</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>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

**P.M. Davidson, Head**

**Professors**

- Davidson, P.M., PhD ............................ Washington State
- Draughon, F.A., PhD ............................... Georgia
- Goan, H.C., PhD .................................... Michigan State
- 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
- Zivanovic, S., PhD .................................. Arkansas

**Assistant Professors**

- D’Souza, D., PhD .................................... Georgia
- Harte, F.M., PhD ..................................... Washington State
- Zhong, Q., PhD ...................................... North Carolina State

**Emeriti Faculty**

- Brekke, C.J., PhD .................................... Wisconsin
- Penfield, M.P., PhD ................................. Tennessee

**Advisors**

- Draughon, Golden, Loveday, Mount, Zivanovic

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 such as animal science or nutrition 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**

The programs in pre-dental, pre-medicine, pre-pharmacy, and pre-veterinary medicine allow students to be awarded a Bachelor of Science in Food Science 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. The last 30 hours of the three-year curriculum must be taken at the University of Tennessee, Knoxville. A total of 124 hours must be completed by the end of the first year in professional school. No later than December 31 of the student’s first year in professional school(s) he/she should contact the Department of Food Science and Technology 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 Food Science**

- **Food Science and Technology Major**
- **Pre-Professional Concentration**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 English*</td>
<td>6</td>
</tr>
<tr>
<td>2 Mathematics 125* or 141* or 151*</td>
<td>3-4</td>
</tr>
<tr>
<td>Biology 130* or 140*</td>
<td>8</td>
</tr>
<tr>
<td>Chemistry 120* or 130*</td>
<td>8</td>
</tr>
<tr>
<td>Food Science and Technology 101</td>
<td>3</td>
</tr>
<tr>
<td>Agriculture and Natural Resources 290</td>
<td>3</td>
</tr>
<tr>
<td>Second Year</td>
<td></td>
</tr>
<tr>
<td>Chemistry 350, 360-369</td>
<td>8</td>
</tr>
<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>
<td>6</td>
</tr>
<tr>
<td>Food Science and Technology 340</td>
<td>3</td>
</tr>
<tr>
<td>5 Directed Science Requirements</td>
<td>12</td>
</tr>
<tr>
<td>Third Year</td>
<td></td>
</tr>
<tr>
<td>Food Science and Technology 301</td>
<td>1</td>
</tr>
<tr>
<td>Food Science and Technology 410-419 and 420-429</td>
<td>9</td>
</tr>
<tr>
<td>6 Directed Science Requirements</td>
<td>9</td>
</tr>
<tr>
<td>4 Arts and Humanities Electives*</td>
<td>6</td>
</tr>
<tr>
<td>Statistics 201* or Quantitative Reasoning Elective*</td>
<td>3</td>
</tr>
<tr>
<td>Culture 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 Food Science 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.

**Fourth Year**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>7 Food Science and Technology 401</td>
<td>1</td>
</tr>
<tr>
<td>8 Food Science and Technology Electives</td>
<td>9</td>
</tr>
<tr>
<td>Nutrition 100*</td>
<td>3</td>
</tr>
<tr>
<td>Communicating Orally Elective</td>
<td>1-3</td>
</tr>
<tr>
<td>Electives</td>
<td>6-9</td>
</tr>
</tbody>
</table>

**Total 124**

* Meets University General Education Requirement.
1 Select either English 101 and 102 or English 118 and 102 Students who obtain a grade of A or B in 118 may complete their freshman requirement with 102, 355, or with a 200-level course in the English Department. The 200-level course may, if so listed, also be used toward the Arts and Humanities requirement.
2 Mathematics placement depends on high school courses and grades and ACT scores.
3 Physics 222 is taken as a directed science elective for pre-professional programs that require it.
4 Choose from the University General Education lists. One of these courses must be a writing-intensive (WC) course.
Directed Technology/Business Electives .......................... 3

5 Directed Technology/Business Electives ........................ 3

Statistics 201* or Mathematics 115* ............................... 3

Communicating Orally Elective* ................................. 3

Electives .................................................................. 3-5

Fourth Year
Food Science and Technology 401 ................................ 1
Food Science and Technology 420, 429 ............................ 3
Food Science and Technology 415, 445, 461 or 462, 490 and 495 . 16-17
5 Directed Technology/Business Electives ....................... 3
Food Science and Technology 493 .................................. 3
Electives .................................................................. 3-4

Total 124

* Meets University General Education Requirement.
1 May select either English 101 and 102 or English 118 and 102. Students who obtain a grade of A or B in 118 may complete their freshman requirement with 102, 355, or with a 200-level course in the English Department. The 200-level course may, if so listed, also be used toward the Arts and Humanities (AH) requirement.
2 Mathematics placement depends on high school courses and grades and ACT scores. Mathematics 125 needed for Statistics 201.
3 May be chosen from Biology 101, 102, 111, 112 or 130.
4 Choose from the University General Education lists. One of these courses must be an approved Communicating through Writing (WC) course.
5 Lists of appropriate courses are available at http://foodsci.utk.edu/academics/undergraduate/curriculum.html and should be selected in conference with academic advisor to match student’s interests with concentrations needed in the food industry.

Minor in Food Science and Technology
Required Courses .................................................. Hours Credit
Food Science and Technology 101 .................................. 3
Food Science and Technology 340 .................................. 3
Food Science and Technology 410 .................................. 3
Food Science and Technology 420 .................................. 2
Food Science and Technology Electives ......................... 6

Total 17

DEPARTMENT OF FORESTRY, WILDLIFE AND FISHERIES

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

Keith L. Belli, Head

Professors
Belli, K.L., PhD .................................................. Minnesota
Buehler, D.A., PhD .............................................. Virginia Tech
Clatterbuck, W.W., PhD ......................................... Mississippi State
Dearden, B.L., PhD ............................................... Colorado State
Fly, J.M., PhD ...................................................... Michigan
Hodges, D.G., PhD ............................................... Georgia
Houston, A.T., PhD ............................................. Tennessee
Ostermeier, D.M., PhD .......................................... Syracuse
Rais, T.G., PhD ................................................... Virginia Tech
Smith, S.E., PhD .................................................. Colorado State
Strange, R.J., PhD ............................................... Oregon State
Wilson, J.L., PhD .................................................. Tennessee

Associate Professors
Buckley, D.S., PhD .............................................. Michigan Tech
Bozell, J.J., PhD .................................................... Colorado State
Harper, C.A., PhD .............................................. Clemson
Hartling, G.J., PhD ............................................... Western Ontario (Canada)
Keysor, P.D., PhD .................................................. Clemson
Muller, L.I., PhD ................................................... Georgia
Wang, S., PhD ..................................................... Nanjing Forestry (China)
Young, T.M., PhD .................................................. Tennessee

Assistant Professors
Eda, S., PhD ...................................................... Japan
Fleming, S.E., PhD ............................................... Alberta (Canada)
Gray, M.J., PhD .................................................... Texas Tech
Harper, D.P., PhD .................................................. Washington State
they will either be fully admitted or released from the program. Students will be reviewed at the end of the fall semester. At that time, any applicant that believes that extenuating circumstances prevented their acceptance into the program may appeal the decision to a faculty committee.

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. 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. 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; wildlife 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.

**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; wildlife recreation including natural and social sciences; and wildlife management including ecology and botany.

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

- **Forestry Major**
- **Forest Resources Management Concentration**

<table>
<thead>
<tr>
<th>Year</th>
<th>Core Courses</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Year</td>
<td>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.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Forest 100</td>
<td></td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>English 101*, 102*</td>
<td></td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Mathematics 125*</td>
<td></td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Biology 111*, 112*</td>
<td></td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Chemistry 100*</td>
<td></td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Social Science Elective*</td>
<td></td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Free Electives</td>
<td></td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>
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 Wildlife and Fisheries Science Major

WILDLIFE AND FISHERIES SCIENCE MAJOR

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

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

- Wildlife and Fisheries Management Concentration

First Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forestry 214, 215</td>
<td>6</td>
</tr>
<tr>
<td>Forestry, Wildlife and Fisheries 212</td>
<td>6</td>
</tr>
<tr>
<td>Economics 201*</td>
<td>4</td>
</tr>
<tr>
<td>Statistics 201*</td>
<td>3</td>
</tr>
<tr>
<td>Biosystems Engineering Technology 326 or Geography 411</td>
<td>3</td>
</tr>
<tr>
<td>Communication Studies 210* or 240*</td>
<td>3</td>
</tr>
<tr>
<td>Environmental and Soil Science 210</td>
<td>3</td>
</tr>
<tr>
<td>3Cultures and Civilizations Elective*</td>
<td>3</td>
</tr>
</tbody>
</table>

Second Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forestry, Wildlife and Fisheries 312*, 313, 317</td>
<td>8</td>
</tr>
<tr>
<td>Forestry 305, 306, 314, 321, 322, 323, 326, 329</td>
<td>19</td>
</tr>
<tr>
<td>3Arts and Humanities Elective*</td>
<td>3</td>
</tr>
</tbody>
</table>

Fourth Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forestry, Wildlife and Fisheries 412, 416</td>
<td>6</td>
</tr>
<tr>
<td>Forestry 331, 332, 420, 422</td>
<td>6</td>
</tr>
<tr>
<td>Wildlife and Fisheries Science 433, 443, 444, or 445</td>
<td>3</td>
</tr>
<tr>
<td>4Ethics Elective</td>
<td>3</td>
</tr>
<tr>
<td>3Cultures and Civilization Elective*</td>
<td>3</td>
</tr>
<tr>
<td>3Arts and Humanities Elective*</td>
<td>0-3</td>
</tr>
<tr>
<td>2Communication Elective*</td>
<td>3</td>
</tr>
<tr>
<td>Free Electives</td>
<td>2-6</td>
</tr>
</tbody>
</table>

Total 120

* Meets University General Education Requirement.
1 Choose from Anthropology 130*, Political Science 102*, Psychology 110* or 117*, Sociology 110*, 117*, or 120*.
2 Electives are chosen in conference with advisor.
3 General Education Electives. Choose two courses from the Cultures and Civilizations list and two courses from the Arts and Humanities list for a total of 12 credit hours. Forestry, Wildlife and Fisheries 312 meets the Communicating through Writing (WC) requirement.
4 Choose from Philosophy 110* (AH), 130, 243* (AH, WC), 245* (AH), 290* (AH, WC), or 340* (WC). If the student selects an Ethics Elective that satisfies the Arts and Humanities General Education Requirement, then the student may select an additional Free Elective in lieu of the Arts and Humanities Elective listed in the Fourth Year.

Minor in Forestry

Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forestry 100 or Forestry, Wildlife and Fisheries 250</td>
<td>3</td>
</tr>
<tr>
<td>Forestry, Wildlife and Fisheries 212, 312, 313, 412, 416, or any fourth year course</td>
<td>12</td>
</tr>
</tbody>
</table>

Total 15

NOTE: Prerequisites will not be waived.

* Meets University General Education Requirement.
1 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.
Second Year
- Forestry, Wildlife and Fisheries 212 ........................................... 3
- Economics 201* ................................................................. 4
- Mathematics 125 ............................................................... 3
- Statistics 201* or Mathematics 115 ........................................ 3
- Biosystems Engineering Technology 326 or Geography 411 . 3
- Animal Science 220 or Wildlife and Fisheries Science 431 . 3
- Biology 250 ................................................................. 3
- Communications Studies 210 or 240*. .................................. 3
- Environmental and Soil Sciences 210 ...................................... 4
2 Cultures and Civilizations* or Arts and Humanities Elective* 3

Third Year
- Wildlife and Fisheries Science 305, 323, 340, 341, 350, 440, 442 . 4
- Forestry, Wildlife and Fisheries 312*, 313, 317 ........................... 8
- Ecology and Evolutionary Biology 470* ................................... 3
- Environmental and Soil Sciences 324 or Wildlife and Fisheries Science 301 . 3
2 Cultures and Civilizations* or Arts and Humanities Elective* 3

Fourth Year
- Select three from Wildlife and Fisheries Science 433, 443, 444, 445 .9
- Forestry, Wildlife and Fisheries 416 ........................................... 3
- Forestry, Wildlife and Fisheries 412, or Forestry 321* or Forestry 422 .3
- Ecology and Evolutionary Biology 330 or 433 .......................... 3
- Ecology and Evolutionary Biology 474 .................................... 4
3 Science Elective ............................................................... 6
1 Social Science Elective* .................................................. 3

Total 125-126

Requirements for the Bachelor of Science in Wildlife and Fisheries Science • Wildlife and Fisheries Science Major • Wildlife Health Concentration

First Year
- Wildlife and Fisheries 101 .................................................. 1
- Forestry, Wildlife and Fisheries 250 ........................................ 3
- Biology 130*-140* ........................................................... 8
- Chemistry 120*-130* ....................................................... 8
- Mathematics 125 ............................................................ 3
- Statistics 201* or Mathematics 115* ................................. 3
- English 101*, 102* ........................................................... 6

Second Year
- Animal Science 220 ........................................................... 3
- Biology 240, 250 .............................................................. 8
- Microbiology 310, 319 ....................................................... 5
- Chemistry 350, 360, 369 ................................................... 8
- Physics 221*, 222* ........................................................... 8

Third Year
- Wildlife and Fisheries Science 301 ...................................... 3
- Forestry, Wildlife and Fisheries 317 ...................................... 3
- Animal Science 380 ....................................................... 3
- Biochemistry and Cellular and Molecular Biology 401, 440 .... 7
- Economics 201* ............................................................ 4
- Communications Studies 210 or 240* ............................... 3
1 Cultures and Civilizations* or Arts and Humanities Elective* 6

Fourth Year
- Select two from Wildlife and Fisheries Science 433, 443, 444, 445 .6
- Wildlife and Fisheries Sciences 431 ...................................... 3
- Biochemistry and Cellular and Molecular Biology 411 .... 3
- Biosystems Engineering Technology 326 or Geography 411 . 3
2 Science Elective .............................................................. 3
1 Social Science Elective* .................................................. 3
1 Cultures and Civilizations* or Arts and Humanities Elective* 6

Total 120

Minor in Wildlife and Fisheries Science

Required Courses
- Forestry, Wildlife and Fisheries 250 ...................................... 3
- Forestry, Wildlife and Fisheries 317 ...................................... 3
- Select three from Forestry, Wildlife and Fisheries 416; Wildlife and Fisheries Science 433, 443, 444, 445 9

Total 15

DEPARTMENT OF PLANT SCIENCES

http://plantsciences.utk.edu/

Robert N. Augé, Acting Head

Professors
- Albright, M.L. (Associate Dean), PhD .................................. Ohio State
- Alten, F.L., PhD ............................................................... Minnesota
- Augé, R.M., PhD .............................................................. Washington State
- Bates, G.E., PhD ............................................................... Georgia
- Denton, H.P., PhD .............................................................. North Carolina State
- Deyton, D.E., PhD .............................................................. North Carolina State
- Hayes, R.M., PhD .............................................................. Illinois
- Lockwood, D.W., PhD ........................................................... Purdue
- Miller, R.D., PhD ............................................................... Kentucky
- Mueller, T.C., PhD .............................................................. Georgia
- Rogers, M.A., PhD .............................................................. North Carolina State
- Samples, T.J., PhD .............................................................. Oklahoma State
- Sams, C.E. (Austin Distinguished Professor), PhD .................. Michigan State
- Stewart, C.N. (Rachef Chair), PhD ........................................ Virginia Tech
- West, D.R., PhD ............................................................... Nebraska

Associate Professors
- Armel, G.R., PhD ............................................................... Virginia Tech
- Cheng, Z.M., PhD ............................................................... Cornell
- Gwathmey, C.O., PhD .......................................................... California (Riverside)
- Hamilton, S.L., EdD .............................................................. Tennessee
- Klingeman, W.E., PhD ......................................................... Georgia
- Menendez, G.L., MS .......................................................... Tennessee
- Pantalone, V.R., PhD ........................................................... North Carolina State
- Rogers, S.M., MLA ............................................................... Georgia
- Smith, C.E., MLA ............................................................... Georgia

Assistant Professors
- Bailey, W.A., PhD .............................................................. Virginia Tech
- Chen, F., PhD ................................................................. California (Davis)
- Main, C.L., PhD ............................................................... Tennessee
- Smith, B.R., PhD ............................................................... Cornell
- Sorochan, J.C., PhD .............................................................. Michigan State
- Stewart, E.E., PhD ............................................................... Illinois
- Thompson, M.A., PhD ........................................................... Tennessee
- Yin, X., PhD ................................................................. Purdue
- Wszelaki, A.L., PhD ............................................................. California (Davis)
- Zale, J.M., PhD ............................................................... Saskatchewan (Canada)

Instructors
- Flanagan, P.C., MS ............................................................... Tennessee

Adjunct Faculty
- Airhart, D.L., PhD ............................................................. Georgia
- Bentley, M.L., EdD .............................................................. Virginia
- Ott, R.J., MBA ................................................................. Tennessee

Emeritus Faculty
- Coffey, D.L., PhD ............................................................... Purdue
- Mcdaniel, G.L., PhD ........................................................... Iowa State

Advisors
- Augé, Hamilton, Menendez, Rogers, Sorochan, C. Stewart, C.N. 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 – landscape design and construction; plant science, biotechnology and horticulture; public horticulture; and turfgrass science and management. With increasing emphasis placed on plants in urban areas, extensive training is offered in landscape horticulture (planning, implementation and management for landscapes, turf and gardens). Comprehensive programs are also offered in plant biotechnology and plant production.

Upon entering the department, each student is assigned a faculty advisor for guidance in selection of career specialties and elective courses. The curriculum builds upon the University General Education Requirement 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 electives. Students in all concentrations are trained to work knowledgeably in general plant culture. Students are encouraged to earn a minor 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.

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. A minimum grade point average of 2.25 is required for all plant sciences courses taken in the major.

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 businesses, graduates of the landscape concentrate 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.

**Technical Electives**

**BIOENERGY CONCENTRATION**
 BIOchemistry and Cellular and Molecular Biology; Biosystems Engineering; Biosystems Engineering Technology; Chemistry; Ecology and Evolutionary Biology; Management; Marketing; Microbiology; Physics; Spanish; Statistics; 200-level and above from Biology, Business Administration; 300-level and above from Agricultural Economics, Environmental and Soil Science, Forestry, Plant Sciences; Accounting 200; Business Law 301; English 295, 360; Finance 301; Geology 201, 202; Journalism/Electronic Media 450, 451, 456.

**BIOTECHNOLOGY CONCENTRATION**
 BIOchemistry and Cellular and Molecular Biology, Biosystems Engineering, Biosystems Engineering Technology, Chemistry; Ecology and Evolutionary Biology, Management, Marketing, Microbiology, Physics, Spanish, Statistics; 200-level and above from Biology, Business Administration; 300-level and above from Agricultural Economics, Environmental and Soil Science, Forestry, Plant Sciences; Accounting 200; Business Law 301; English 295, 360; Finance 301; Geology 201, 202; Journalism/Electronic Media 450, 451, 456.

**HORTICULTURE SCIENCE AND PRODUCTION CONCENTRATION**
 300-level and above from Agricultural Economics, Environmental and Soil Science, Forestry, Plant Sciences; 200-level and above from Biology, Business Administration; courses from Biochemistry and Cellular and Molecular Biology, Biosystems Engineering, Biosystems Engineering Technology, Chemistry, Ecology and Evolutionary Biology, Management, Marketing, Microbiology, Physics, Spanish, Statistics; and Accounting 200; Business Law 301; English 295, 360; Finance 301; Geology 201, 202; Journalism/Electronic Media 450, 451, 456.

**TURFGRASS SCIENCE AND MANAGEMENT CONCENTRATION**
 LANDSCAPE DESIGN AND CONSTRUCTION CONCENTRATION: Business Administration; Entomology and Plant Pathology; Plant Sciences; Statistics; Accounting 200; Advertising courses; Architecture 111, 180, 211, 232, 271; Art 101, 103; 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, 412; Business Law 301; Communication Studies 310; Ecology and Evolutionary Biology 304, 330, 433; English 295*, 360*; Environmental and Soil Science 324, 334; Forestry 321; Forestry Wildlife and Fisheries 211, 212, 311, 317; Geography 131, 365, 366; Geology 201, 202, 203; Philosophy 243*, 244, 245*; Political Science 402, 403, 446; Spanish 111, 112, 211, 212; University Studies 413.

PUBLIC HORTICULTURE CONCENTRATION
 300-level and above for Environmental and Soil Sciences; Forestry; Art 481; Agriculture and Extension Education 345; Communication Studies 440; Ecology and Evolutionary Biology 309, 330, 433; Educational Psychology 210; English 295*, 360*; Philosophy 245*; Public Relations 270; Recreation and Leisure Studies 201, 430.

TURFGRASS SCIENCE AND MANAGEMENT CONCENTRATION 300-level and above from Agricultural Economics; Biochemistry and Cellular and Molecular Biology; Biosystems Engineering; Biosystems Engineering Technology; Ecology and Evolutionary Biology; Entomology and Plant Pathology; Environmental and Soil Sciences; Forestry; Plant Sciences; and English 295*, 360*.

Courses marked with an * meet the University General Education Requirement.

**PLANT SCIENCES MAJOR**

**BIOENERGY CONCENTRATION**

The bioenergy concentration is intended for students who are interested in pursuing careers in the quickly-expanding biofuels and bioenergy fields. The graduate will have the background and internship experience to enter directly into the bioenergy workforce. The bioenergy industry primarily is concerned with converting plant feedstocks into liquid fuels such as ethanol and biodiesel. The great resurgence of industry and public support for research and development in this field will require a modern and multidisciplinary workforce. The student will have the opportunity to explore branch disciplines of bioenergy such as agronomy, biotechnology, business and economics, chemistry, engineering or microbiology. In addition, the need for scholars and scientists with advanced degrees (MS and PhD) will also grow exponentially in bioenergy as billions of dollars of federal funds is channeled towards new bioenergy solutions. The bachelor’s degree will also prepare students for entrance into graduate programs.

**Requirements for the Bachelor of Science in Plant Sciences**

**Plant Sciences Major - Bioenergy Concentration**

**First Year**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Agriculture and Natural Resources 100 or First Year Studies 101 . . .</td>
<td>1</td>
</tr>
<tr>
<td>Biology 111*, 112* . . . . . .</td>
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</tr>
<tr>
<td>Chemistry 120* and 130* . . . . . .</td>
<td>8</td>
</tr>
<tr>
<td>English 101*, 102* . . . . . .</td>
<td>6</td>
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<tr>
<td>Plant Sciences 250 . . . . . .</td>
<td>8</td>
</tr>
<tr>
<td>Quantitative Reasoning Electives*</td>
<td>6</td>
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</table>

**Second Year**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture and Natural Resources 290 . . . . . .</td>
<td>3</td>
</tr>
<tr>
<td>Arts and Humanities Electives*</td>
<td>6</td>
</tr>
</tbody>
</table>
Communication Studies 210 or 240* ........................................... 3
3Cultures and Civilizations Elective* ..................................... 3
4Economics Elective* .......................................................... 3-4
Environmental and Soil Sciences 210 ..................................... 4
3Social Sciences Elective* ...................................................... 3
Technical Electives ............................................................. 5-6

**Third Year**
Agricultural Economics 212 ................................................. 3
Biochemistry and Cellular and Molecular Biology 321 ................. 4
3Cultures and Civilizations Elective* ..................................... 3
5Agricultural and Extension Education 440* or English 295* or 360* or Journalism and Electronic Media 201* ............... 3
Plant Sciences 353, 435 ....................................................... 5
Technical Electives ............................................................. 13
Third Year Summer
Plant Sciences 492 ............................................................ 3

**Fourth Year**
2Specialty Area ................................................................. 9-11
Environmental and Soil Sciences 334 ..................................... 3
Plant Sciences 331, 465, 475, 497 ....................................... 9
Technical Electives ............................................................. 3
Unrestricted Electives .......................................................... 4-6

* Meets University General Education Requirement.
1 Required of freshmen only; requirement is waived for transfer students.
2 Choose one Specialty Area. Select Quantitative Reasoning Electives General Education courses based on prerequisites for courses in the Specialty Area.
3 Choose from the University General Education lists. Selection should be made in conference with academic advisor.
4 Economics 201 (4) Principles of Economics satisfies the University General Education-Social Science requirement and the major requirement for economics. If the student transfers ECON LD for 3 credits, it will satisfy the major requirement for economics but will not satisfy the General Education-Social Science requirement. In these cases, the student should take two courses from the approved General Education-Social Sciences list.
5 Meets the University General Education Requirement for Communicating through Writing (WC).

**SPECIALTY AREAS**
Specialty electives are grouped into specialty areas. Students must complete one specialty area, consisting of three courses (9-11 credit hours). Students wishing to expand on a specialty or complete more than one specialty area are welcome to do so, using Technical Electives for this purpose. A course may be counted in one specialty area only and may not be used to fulfill any other elective requirement. Check the Undergraduate Catalog for any prerequisites required for these courses.

**Agronomy**
Plant Sciences 457, 458; and select 6 hours from Environmental and Soil Sciences 300-level and above.

**Biosystems Engineering**
Biosystems Engineering 231; Biosystems Engineering Technology 326, 432, 434, 462.

**Biotechnology**
Biology 240; Plant Sciences 454 or Biochemistry and Cellular and Molecular Biology 404; Biochemistry and Cellular and Molecular Biology 401 or Microbiology 210.

**Business**
Accounting 200; Agricultural Economics 355, 470; Business Administration 201, Marketing 300; Statistics 201.

**Chemistry**
Chemistry 230 or 310; Chemistry 350, 360, 369; Food Science and Technology 410, 419.

**Forestry and Wildlife**
200-level and above from Forestry; 200-level and above from Forestry, Wildlife and Fisheries.

**Microbiology**
Microbiology 210 and above; Food Science and Technology 420, 429.

**BIOTECHNOLOGY CONCENTRATION**
The biotechnology concentration is designed for students wishing to pursue advanced degrees in plant molecular biology and biotechnology and/or careers in the plant biotechnology industry. For example, the curriculum will prepare students to be competitive for entrance into MS and PhD degree programs, which in turn, prepare students for life as professional scientists. Alternatively, the plant biotechnology industry and biotechnology-affiliated industries have recurrent demand for competent BS-level scientists. One hallmark of the degree is requirement for students to participate in research directly in an affiliated faculty member’s lab. This hands-on experience is reported by students to be a highlight of their degree program.

**Requirements for the Bachelor of Science in Plant Sciences**

*Plant Sciences Major* • Biotechnology Concentration

**First Year**
1Agriculture and Natural Resources 100 or First Year Studies 101 ............................... 1
2Arts and Humanities Elective* ............................................. 3
Biology 111*, 112* ............................................................. 8
Chemistry 120* and 130* ..................................................... 8
English 101*, 102* ............................................................. 6
3Quantitative Reasoning Electives* ....................................... 6

**Second Year**
Agriculture and Natural Resources 290 .................................. 3
Agricultural Economics 212 ................................................. 3
2Arts and Humanities Elective* ............................................. 3
Chemistry 350 ................................................................. 3
Entomology and Plant Pathology 313 or 321 or 410 .......................... 3
Environmental and Soil Sciences 210 ..................................... 4
3Economics Elective* .......................................................... 3-4
4Arts and Humanities Elective* ............................................. 3
Social Sciences Elective* ...................................................... 3
Unrestricted Electives .......................................................... 2-3

**Third Year**
Biochemistry and Cellular and Molecular Biology 321 .................... 4
2Cultures and Civilizations Elective* ..................................... 3
Chemistry 350 ................................................................. 3
Entomology and Plant Pathology 313 or 321 or 410 .......................... 3
Environmental and Soil Sciences 334 .................................... 3
4Plant Sciences Electives ...................................................... 9
Plant Sciences 457-458 or 457-459 ....................................... 3
Technical Electives ............................................................. 3

**Fourth Year**
Plant Sciences 353, 454, 461 and 470 .................................... 9
Plant Sciences 454 or Biochemistry and Cellular and Molecular Biology 404 ................................................................. 3-4
Plant Sciences 404 ............................................................. 4
Plant Sciences 492 or 497 .................................................... 3
Technical Electives ............................................................. 14-15

* Meets University General Education Requirement.
1 Required of freshmen only; requirement is waived for transfer students.
2 Choose from the University General Education lists. Selection should be made in conference with academic advisor.
3 Economics 201 (4) Principles of Economics satisfies the University General Education-Social Science requirement and the major requirement for economics. If the student transfers ECON LD for 3 credits, it will satisfy the major requirement for economics but will not satisfy the General Education-Social Science requirement. In these cases, the student should take two courses from the approved General Education-Social Sciences list.
4 Select any Plant Sciences courses beyond those that are required.

NOTE: Students must meet the University 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. Plant Sciences 410 and 448 satisfy the Communicating through Writing requirement.
HORTICULTURE SCIENCE AND PRODUCTION CONCENTRATION

The horticulture science and production concentration is designed to provide students with the knowledge and skills needed for production, management and marketing of horticultural crops. This concentration also prepares students with strong interests in science and/or technology to pursue opportunities in research-related fields, including graduate studies. Careful selection of departmental courses and other electives in consultation with the assigned academic advisor will prepare graduates for the career of their choice. Employment prospects range from managing nursery and greenhouse businesses, to consulting and education, to marketing fruits and vegetables for healthier lifestyles.

**Requirements for the Bachelor of Science in Plant Sciences**
- **Plant Sciences Major • Horticulture Science and Production Concentration**

<table>
<thead>
<tr>
<th>First Year</th>
<th>Hours Credit</th>
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<tbody>
<tr>
<td>Agriculture and Natural Resources 100 or First Year Studies 101</td>
<td>1</td>
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<tr>
<td>Biology 111*, 112*</td>
<td>8</td>
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<tr>
<td>Chemistry 100 and 110*, or 120* and 130*</td>
<td>8</td>
</tr>
<tr>
<td>English 101*, 102*</td>
<td>6</td>
</tr>
<tr>
<td>2Quantitative Reasoning Electives*</td>
<td>6</td>
</tr>
</tbody>
</table>

**Second Year**

| Agriculture and Natural Sciences 290 | 3 |
| 2Arts and Humanities Elective* | 3 |
| Communication Studies 210* or 240* | 3 |
| 2Cultures and Civilizations Elective* | 3 |
| Environmental and Soil Sciences 210 | 4 |
| Economics Elective* | 3-4 |
| Plant Sciences 210 | 3 |
| Physics 101 | 3 |
| 2Social Sciences Elective* | 3 |

**Third Year**

| Biochemistry and Cellular and Molecular Biology 321 or Forestry 414 | 3-4 |
| 2Cultures and Civilizations Elective* | 3 |
| English 295* or 360* | 3 |
| Entomology and Plant Pathology 313 or 321 or 410 | 3 |
| Environmental and Soil Sciences 334 | 3 |
| Plant Sciences 220, 230, 290 or 291 | 3 |
| Plant Sciences 457-458 or 457-459 | 3 |
| 4Plant Sciences Electives | 6 |
| Technical Electives | 4-5 |

**Fourth Year**

| Plant Sciences 331, 353, 410*, 430, 470 | 13 |
| Plant Sciences 492 or 497 | 3 |
| 4Plant Sciences Electives | 6 |
| Technical Electives | 4-5 |
| Unrestricted Electives | 5 |

**Total 124**

* Meets University General Education Requirement.
1 Required of freshmen only; requirement is waived for transfer students.
2 Choose from the University General Education lists. Selection should be made in conference with academic advisor.
3 Economics 201 (4) Principles of Economics satisfies the University General Education-Social Science requirement and the major requirement for economics. If the student transfers ECON LD for 3 credits, it will satisfy the major requirement for economics but will not satisfy the General Education-Social Science requirement. In these cases, the student should take two courses from the approved General Education-Social Sciences list.
4 Select any Plant Sciences courses beyond those that are required.

**NOTE:** Students must meet the University 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. Plant Sciences 410 and 448 satisfy the Communicating through Writing requirement.

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 and 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**

<table>
<thead>
<tr>
<th>First Year</th>
<th>Hours Credit</th>
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</thead>
<tbody>
<tr>
<td>Agriculture and Natural Resources 100 or First Year Studies 101</td>
<td>1</td>
</tr>
<tr>
<td>2Arts and Humanities Elective*</td>
<td>3</td>
</tr>
<tr>
<td>Biology 111*, 112*</td>
<td>8</td>
</tr>
<tr>
<td>Chemistry 100* or 120*</td>
<td>3</td>
</tr>
<tr>
<td>Computer Science 100*</td>
<td>3</td>
</tr>
<tr>
<td>English 101*, 102*</td>
<td>6</td>
</tr>
<tr>
<td>2Quantitative Reasoning Elective*</td>
<td>3</td>
</tr>
<tr>
<td>2Social Sciences Elective*</td>
<td>3-6</td>
</tr>
</tbody>
</table>

**Second Year**

| Communication Studies 210* or 240* | 3 |
| Economics Elective* | 3-4 |
| Environmental and Soil Sciences 210 | 4 |
| Plant Sciences 210, 220, 280 | 9 |
| Technical Electives | 8 |
| Unrestricted Elective | 2-4 |

**Third Year**

| Cultures and Civilizations Elective* | 3 |
| Plant Sciences 350, 380 | 6 |
|Select from Plant Sciences 226, 230, 240, 330, 348, 360, or 370 | 5-6 |
| Plant Sciences 290 or 291 | 3 |
| Technical Electives | 6 |
|Unrestricted Electives | 3-8 |

**Third Year – Summer**

| Plant Sciences 492 | 3 |

**Fourth Year**

| Arts and Humanities Elective* | 3 |
| Cultures and Civilizations Elective* | 3 |
| Plant Sciences 421, 460, 480, 485 | 13 |
| Select from Plant Sciences 348, 410*, 427, 429, 430, 434, 436, 437, 441, 446, 448*, 450, 469, 470, 493, or 497 | 5-6 |
| Technical Electives | 4-5 |

**Total 124**

* Meets University General Education Requirement.
1 Required of freshmen only; requirement is waived for transfer students.
2 Choose from the University General Education lists. Selection should be made in conference with academic advisor.
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**NOTE:** Students must meet the University 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 agriculture, 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

<table>
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<tr>
<th>First Year</th>
<th>Hours Credit</th>
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<tr>
<td>2 Arts and Humanities Elective*</td>
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<tr>
<td>Biology 111*, 112*</td>
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<tr>
<td>Chemistry 100* or 120*</td>
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</tr>
<tr>
<td>Computer Science 100* or 102*</td>
<td>3</td>
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<tr>
<td>English 101*, 102*</td>
<td>6</td>
</tr>
<tr>
<td>Environmental and Soil Sciences 210</td>
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</tr>
<tr>
<td>2 Quantitative Reasoning Elective*</td>
<td>3</td>
</tr>
<tr>
<td>2 Arts and Humanities Elective*</td>
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<tr>
<td>Communication Studies 240*, 241*</td>
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<tr>
<td>2 Cultures and Civilizations Elective*</td>
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<tr>
<td>Plant Sciences 210</td>
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<td>Select from Plant Sciences 220, 226, 280, 290, or 291</td>
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<td>2 Economics Elective*</td>
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<tr>
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<table>
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<tr>
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<td>Plant Sciences 230, 240, 328, 330, 370, 410*, 434, 436</td>
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<thead>
<tr>
<th>Third Year - Summer</th>
<th>Hours Credit</th>
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<thead>
<tr>
<th>Fourth Year</th>
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<td>Entomology and Plant Pathology 313 or 321</td>
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<tr>
<td>Entomology and Plant Pathology 410</td>
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<td>Plant Sciences 448*, 470</td>
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<td>Select from Plant Sciences 427, 430, 437, 439, 446, or 469</td>
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<tr>
<td>Plant Sciences 421 or Unrestricted Electives</td>
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</table>

Total 124

* Meets University General Education Requirement.
1 Required of freshmen only; requirement is waived for transfer students.
2 Choose from the University General Education lists. Selection should be made in conference with academic advisor.
3 Economics 201 (4) Principles of Economics satisfies the University General Education-Social Science requirement and the major requirement for economics. If the student transfers ECON LD for 3 credit hours, it will satisfy the major requirement for economics but will not satisfy the University General Education-Social Science requirement. In these cases, the student should take two courses from the Social Sciences list.

NOTE: Students must meet the University 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.

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

<table>
<thead>
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<th>First Year</th>
<th>Hours Credit</th>
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</thead>
<tbody>
<tr>
<td>1 Agriculture and Natural Resources 100 or First Year Studies 101</td>
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<tr>
<td>2 Arts and Humanities Elective</td>
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<tr>
<td>Chemistry 120* and 130*</td>
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<td>Biology 111*, 112*</td>
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<tr>
<td>English 101*, 102*</td>
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<tr>
<td>2 Quantitative Reasoning Electives*</td>
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<tr>
<td>2 Social Sciences Elective*</td>
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<table>
<thead>
<tr>
<th>Second Year</th>
<th>Hours Credit</th>
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<tbody>
<tr>
<td>Agriculture and Natural Resources 290</td>
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<td>Biology 111*, 112*</td>
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<tr>
<td>Communications Studies 210*, 240*</td>
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<tr>
<td>Economics Elective*</td>
<td>3-4</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>Select from Plant Sciences 210, 220, 280, or 291</td>
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<td>Unrestricted Electives</td>
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<thead>
<tr>
<th>Third Year</th>
<th>Hours Credit</th>
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<tbody>
<tr>
<td>2 Cultures and Civilizations Elective*</td>
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<td>Select from Plant Sciences 210, 220, 280, or 291</td>
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<td>Plant Sciences 330, 331, 341, 343, 348, 442, and 457-458</td>
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<th>Third Year - Summer</th>
<th>Hours Credit</th>
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<tbody>
<tr>
<td>Plant Sciences 492*</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fourth Year</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 Arts and Humanities Elective*</td>
<td>3</td>
</tr>
<tr>
<td>Biology 250 or 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>
</tr>
<tr>
<td>Select from Plant Sciences 353, 360, 410, 421, 427, 429, 430, 434, 435, 436, 437, 438, 446, 448*, 449, 451, 461, 469, or 494</td>
<td>6</td>
</tr>
<tr>
<td>Plant Sciences 441, 470</td>
<td>5</td>
</tr>
<tr>
<td>Technical Electives</td>
<td>5-6</td>
</tr>
</tbody>
</table>

Total 124

* Meets University General Education Requirement.
1 Required of freshmen only; requirement is waived for transfer students.
2 Choose from the University General Education lists. Selection should be made in conference with academic advisor.
3 Economics 201 (4) Principles of Economics satisfies the University General Education-Social Science requirement and the major requirement for economics. If the student transfers ECON LD for 3 credit hours, it will satisfy the major requirement for economics but will not satisfy the University General Education-Social Science requirement. In these cases, the student should take two courses from the Social Sciences list.

NOTE: Students must meet the University 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 Plant Sciences

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

Total 18
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 offers three professionally accredited programs of study at the undergraduate and graduate level. The college also offers a new professional landscape architecture program at the graduate level and anticipates accreditation of this degree with the first graduating class.

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, including students with a degree from a four-year undergraduate architecture program. The college also offers a post-professional Master of Architecture (see Graduate Catalog for more information).

Master of Landscape Architecture
The landscape architecture program offers three different graduate degrees and four paths in landscape architecture, including a professional degree path, the Master of Landscape Architecture. Landscape architecture is an intercollegiate program jointly supported by the College of Architecture and Design and the College of Agricultural Sciences and Natural Resources (see Graduate Catalog for more information).

Accreditation

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 three types of degrees – the Bachelor of Architecture, the Master of Architecture, and the Doctor of Architecture. A program may be granted a six-year, three-year, or two-year term of accreditation, depending on the extent of its conformance with established educational standards.

Master’s degree programs may consist of a pre-professional undergraduate degree and a professional graduate degree that, when earned sequentially, constitute 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.

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 Council for Interior Design Accreditation (CIDA), the sole agency authorized to accredit U.S. professional degree programs in interior design.
Admission

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).

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. (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, 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.

- If applying online, make a copy of application and submit it to the Office of Admissions with portfolio by November 1.
- If applying with a paper copy, send the application to the Office of Admissions with portfolio by November 1.

The portfolio 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 2.30 grade point average to be considered. The average grade point average has been 3.50 for students accepted in recent years. Transfer students should apply by November 1 and should discuss their options with the Director of Student Services.

Academic Policies

Advising

Students must plan their schedule in consultation with the college’s Student Services Center. 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 on the college 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)
McRae, J.M. (Dean), MArch ................................... Rice
Rabun, J.S., PhD ........................................ York
Robinson, M.A., MArch .................................. Pennsylvania
Schimmenti, M. (Interim Director), MArch ...................................... Florida
Shell, W.S., MSArch ........................................ Columbia

Associate Professors

Ambroziak, B., MArch ...................................... Princeton
Davis, T.K., MArch ........................................ Cornell
DeKay, M., MArch ........................................ Oregon
Dodds, G., PhD ........................................ Pennsylvania
Fox, D., MArch ........................................ Cranbrook Academy of Art
Goeritz, H., Dipl-Ing (FH) .................................. HAWK Hildesheim
Klinkhammer, B., Dipl-Ing (Interim Associate Dean) .................................. RWTH Aachen
Martella, W.E., BArch ................................... California (Berkeley)
Moir-McClean, T., MArch .................................. Michigan
Stach, E., Dipl-Ing ........................................ RWTH Aachen

Assistant Professors

Ambroziak, K., MArch ...................................... Princeton
Kalas, G., PhD ........................................ Bryn Mawr
Shelton, T., MPhil ........................................ Cambridge
Stuth, T., MArch ........................................ Wisconsin

Assistant Professors

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.

Progression

Students must maintain an overall 2.30 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
In order to graduate, students must receive a grade of C or better in all required professional courses from the School of Architecture.

Students may advance to second year design (271) with satisfactory completion of the first year program (including mathematics) with a grade point average of 2.30. Students may advance to third year design (371) with the completion of all first and second year courses.

For 271 and all subsequent design courses, students must maintain a design grade point average of 2.30. Students must repeat the previous level design courses(s) until the average is raised to 2.30.

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 Hall 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 III 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 All College Spring Thing (TAAAST), 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 advanced 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 addition, the college has recently established a new summer program in Helsinki, Finland.

In cooperation with Danish Institute for Study Abroad (DIS), a program is regularly offered in Copenhagen which attracts architecture students from around the world. Students also have the opportunity to participate in the following study abroad/exchange programs: International Advanced Architectural Design Program (IAAD) at the Bauhaus University Weimar, Germany; Dessau Summer School of Architecture in Dessau, Germany, and the Royal Melbourne Institute of Architecture in Melbourne, Australia.

During the summer, many different 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.

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

BACHELOR OF ARCHITECTURE

The curriculum for the Bachelor of Architecture degree includes a combination of required and elective courses offering 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 complete the following requirements in their course of study. For any additional specialized requirements, the student should refer to the Student Handbook of the School of Architecture and the student’s faculty advisor.

Requirements for the Bachelor of Architecture

<table>
<thead>
<tr>
<th>First Year</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Architecture 101 or 107, 102</td>
<td>.5</td>
</tr>
<tr>
<td>Architecture 121, 122</td>
<td>.4</td>
</tr>
<tr>
<td>Architecture 171, 172</td>
<td>.3</td>
</tr>
<tr>
<td>Architecture 211* or 217*</td>
<td>.3</td>
</tr>
<tr>
<td>English 101*, 102*</td>
<td>.6</td>
</tr>
<tr>
<td>Mathematics 125*</td>
<td>.3</td>
</tr>
<tr>
<td>Electives</td>
<td>.6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Year</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Architecture 212*, 213*</td>
<td>.6</td>
</tr>
<tr>
<td>Architecture 231</td>
<td>.3</td>
</tr>
<tr>
<td>Architecture 232</td>
<td>.3</td>
</tr>
<tr>
<td>Architecture 271, 272</td>
<td>.12</td>
</tr>
<tr>
<td>Physics 161*</td>
<td>.3</td>
</tr>
<tr>
<td>Electives</td>
<td>.9</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Third Year</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Architecture 312</td>
<td>.3</td>
</tr>
<tr>
<td>Architecture 331*, 332</td>
<td>.8</td>
</tr>
<tr>
<td>Architecture 341, 342</td>
<td>.8</td>
</tr>
<tr>
<td>Architecture 371, 372</td>
<td>.12</td>
</tr>
<tr>
<td>Electives</td>
<td>.3</td>
</tr>
</tbody>
</table>
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>Course</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Architecture 121, 122, 171</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>English 101*, 102*</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Interior Design 141, 171, 172 or 177</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Mathematics 123*</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Natural Science*</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Social Sciences*</td>
<td>3</td>
<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 the University General Education Requirement.
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. Sixteen 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. Eleven hours of free electives.
4 One course from the following Design Studio Options—Architecture 482, 483, 485, 486, or 489. Architecture 472 may be taken at any time in the last three semesters.

**INTERIOR DESIGN PROGRAM**

**Professors**

DeLong, A., PhD — Penn State 
Rabun, J., PhD — Tennessee

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 Council for Interior Design Accreditation (CIDA). All graduates, with sufficient internship experience after graduation, are eligible to take the National Council for Interior Design Qualification (NCIDQ) exam.

**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 2.30 or greater.
- Cumulative grade point average in the major of 3.00 or greater in the following interior design courses—141, 171, 172, 200, 221, 261, 271, 272, with no grade below a C.

Special Programs in Interior Design

**Required Summer Internship**

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

**Professional Community’s Involvement**

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

**Field Trips**

All interior design students regularly participate in a variety of field trips to important works of design as well as to interior design conventions and product shows.

**Opportunities for Foreign Study**

Students in their fourth year of study may elect to spend one semester studying abroad in a program organized either by the University of Tennessee or by other accredited interior design or architecture programs. In cooperation with the Department of Architecture at Krakow Polytechnic University and the Interior Design Program at the University of Tennessee, a study abroad program will be available in the fall and spring, along with a two-week charette in the summer. The Danish International Studies Program will be available in the fall and spring, along with a two-week charette in the summer. The Danish International Studies (DIS) is regularly offered and attracts interior design and architecture students from around the world.

**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.
Second Year  
Architecture 231 .............................................. 3  
Art History 172*, 173* ........................................... 6  
Interior Design 200, 221, 261, 271, 272 ....................... 19  
Physics 161* ................................................... 3

Third Year  
3 Communicating Orally* ......................................... 3  
4 Cultures and Civilizations* ................................... 3  
Interior Design 311, 312, 331, 360, 371, 372, 460* ............... 26  
Materials Science Engineering 220 ............................... 3

Summer  
Interior Design 420 ............................................. 3

Fourth Year  
5 Communicating through Writing* ............................ 3  
4 Cultures and Civilizations* ................................... 3  
Professional Elective ........................................... 3  
Interior Design 471, 472 or 477, 480 ........................... 15

2 Social Sciences* ............................................. 3

Total 127

* Meets University General Education Requirement.
1 See Natural Sciences list – University General Education Requirement. Select one course with a lab.
2 See Social Sciences list – University General Education Requirement. Select two courses from the list.
3 See Communicating Orally list – University General Education Requirement. Select one course from the list.
4 See Cultures and Civilizations list – 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.
5 See Communicating through Writing list – University General Education Requirement. Select one course from the list.
The College of Arts and Sciences is home to a wide array of academic disciplines and interdisciplinary programs. Such diverse areas of study as classics, anthropology, women’s studies and Latin American studies are represented among the 25 departments and schools and 12 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 twenty-six disciplines and thirteen or more interdisciplinary programs. The college’s faculty help their students prepare for any and all careers. Faculty research and creative activity are the foundations on which education in this college is built. As a result of that faculty endeavor, the lives of students are enriched and the world’s body of knowledge grows. That is the basic mission of the College of Arts and Sciences faculty in a research university.

Programs of Study

Seeking the broad, general goals of a liberal education, students come into the college also with a wide variety of specific educational and vocational objectives. Recognizing this diversity, the college offers a number of different programs of study leading to the baccalaureate degree and also several pre-professional curricula which prepare students for advanced study but do not lead to a degree from this college.

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. Two 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.

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.

Basic Skills and Distribution Requirements

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

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 6 hours in English writing courses – either English 101 and 102; or English 118 and English 102; or English 131 and 132. Students who obtain a grade of A or B in 118 may complete their freshman requirement with 102, or with a sophomore literature course in the English Department, or English 355. The sophomore literature course may, if so listed, also be used toward the humanities distribution requirement.
- By earning a score of 4 or 5 on the College Board Advanced Placement Test in Literature and Composition. Credit in English 101 is earned with a score of 4 or 5 on the Advanced Placement Test in Language and Composition.

Placement Information

Eligibility for English 118 will be determined by ACT or SAT scores and a placement exam. Selected students will be placed in English 103 based on ACT or SAT scores and may not drop this course without departmental approval. Details are available from the English Department.

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

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 by 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 6 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 6 hours of intermediate language credit. Under no circumstances may any student earn more than 6 hours of language placement examination credit. Students who feel they have been inappropriately placed should consult the appropriate language section.

Mathematics and Quantitative Reasoning
Objectives: 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.

- Statistics 201, 207.

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: 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; Geography 121-122; Geology 101, 102, 103; Geology 107-108; Physics 135-136, 137-138, 221-222.
- Anthropology 110, 117, 304; Astronomy 151; 152; 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, 207, 208; Mathematics 231; 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 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
- Africana Studies 201, 202; Anthropology 130, 137; Economics 201, 207; Geography 101, 102; Political Science 102; Psychology 110, 117; Sociology 110, 117, 120, 127.

List B
- Africana Studies 310; Anthropology 120, 127, 362; Audiology and Speech Pathology 320; Communication Studies 201, 220, 260, 330; Ecology and Evolutionary Biology 304; Educational Psychology 210; Geography 320, 340; Global Studies 250; Linguistics 200; Musicology 310; Political Science 101, 107; Psychology 220, 360; Religious Studies 232, 301; Sociology 232, 250, 260, 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 General Education Requirement, students must choose two courses identified by an asterisk (*) from the list of courses below.
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COLLEGE OF ARTS AND SCIENCES

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 learn course materials through writing;
develop critical thinking skills; demonstrate the ability to sustain
an argument; and strengthen existing writing skills.
List A – Literature
Africana Studies *225, *226, *233; Asian Languages 311,
312, 313, 314; Classics *253; Comparative Literature 202, 203;
Sciences 330; Italian 401, 402; Judaic Studies 312; Latin American Studies 315; Medieval Studies 261, 262, 401, 402; Portuguese 315; Religious Studies 312, 313; Russian *221, *222;
Women’s Studies 210, 215.
List B – Philosophical and Religious Thought
Classics 201, *221, *222; History 321, 322; Legal Studies
*245, *246, *290, 340, 347, 382; Religious Studies 101, 102,
*244, 321, 322; Women’s Studies 382.
List C – Study or Practice of the Arts
Africana Studies *162; Architecture 111; Art Ceramics 191; Art
Design/Graphic 191; Art Drawing 191; Art Media Arts 191; Art Painting 191; Art Printmaking 191; Art Sculpture 191; Art History *162,
Classics *232; Communication Studies 280; English 262, 264, 281;
Music Theory 100; Musicology *110, *115, *120, *125 *290; Philosophy 350, 353; Theatre *100, 220.
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.
Africana Studies 235-236; Asian Studies 101-102; History
241-242, 247-248, 255-256, 261-262, 267-268; Latin American
Studies 251-252; Medieval Studies 201-202.

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. All students must complete one course from
each list. All courses are writing-emphasis courses.
List A – United States Studies
Africana Studies 315, 331, 333, 343, 352, 429, 445, 446, 480,
484; American Studies 310, 312, 334, 343, 355, 423, 469;
Anthropology 305, 310, 312, 315, 320, 321, 322, 360, 363, 454;
Art History 470, 472, 473, 483; Cinema Studies 312, 334, 469;
Communication Studies 450, 466, 469, 476; Ecology and Evolutionary Biology 305; Economics 331, 333, 361, 362, 371, 413,
435, 472; English 331, 332, 333, 334; Geography 361, 363, 365,

366, 423, 441, 443; Geology 381; History 350, 351, 354, 355,
445, 446, 451, 453, 483; Philosophy 390; Political Science 311,
312, 330, 374; Psychology 434; Religious Studies 351, 352, 355;
Sociology 310, 340, 343, 455; Women’s Studies 310, 332, 340,
434, 453, 466, 469, 476, 484.
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
Africana Studies 335, 371, 372, 373, 379, 381, 421, 452,
461, 462, 463; Anthropology 324, 373; Art History 461, 462,
463; English 335; Geography 379; History 371, 372, 381;
Political Science 452; Religious Studies 373.
Asia
Art History 411, 415, 416, 419, 464; Asian Languages
315, 321, 413; Asian Studies 374; Cinema Studies 315;
Geography 374; History 389, 390, 391, 392; Japanese 321,
413; 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,
422; Classics 340, 362, 381, 382, 383, 384, 436, 442, 443,
444, 445, 471, 472; English 301, 302, 321, 401, 422; French
420, 431, 432; Geography 371; German 323, 350, 363; History 319, 320, 323, 429, 432, 471, 472, 473, 490; Italian 414,
422; Judaic Studies 322, 350, 425, 431; Linguistics 321;
Medieval Studies 322, 403, 405, 431, 441, 425, 451; Philosophy 320, 322, 324, 326, 327, 328; Political Science 361, 459;
Russian 325, 371, 372; Women’s Studies 383, 422, 432.
Latin America
Africana Studies 319, 336; Anthropology 313, 316, 319, 323;
Cinema Studies 326, 434, 465; English 336; Geography 373; History 360, 361, 460, 461, 462, 463, 465, 475; Latin American Studies 303, 313, 314, 319, 326, 331, 360, 361, 372, 373, 401, 430,
432, 456, 460, 461, 462, 463, 475; Political Science 456; Portuguese 303, 326, 430, 432; Spanish 331, 401, 434, 465, 489.
Middle East
Anthropology 463; Asian Studies 332, 333; History 366,
369, 370, 383, 384; Judaic Studies 311, 369, 370, 381, 383,
384, 385, 405; Religious Studies 311, 332, 333, 381, 385, 405.
Critical Issues in Foreign Studies
Africana Studies 442; Cinema Studies 482, Economics 322;
Geography 345, 351; Global Studies 482; History 374, 375,
395, 484; Judaic Studies 395, 484; Mathematics 400; Modern
Foreign Languages and Literatures 482; Political Science 350,
365; Sociology 360, 442, 446, 465; Women’s Studies 360.

Majors
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 6 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 may declare a major as soon as they have met


required standards; however, they must officially declare a major by the time they have earned 75 credit hours. Transfer students who have earned more than 75 hours before entering UT must declare a major upon completing 15 hours of UT credit. The requirements for declaring a specific major are stated under the department or program listing. To declare a major, students should go to the academic department which houses the major. For more information, contact Arts and Sciences Advising Services.

Students transferring from other institutions must complete at least 9 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.

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 6 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

For details, see the College of Business Administration section of this catalog and contact the Undergraduate Programs Office (College of Business Administration), 112 Aconda Court.

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

Students 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 and middle school 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 2.70 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 this 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 General Education Requirement.

Further information and applications may be obtained from the College Scholars Office, 1116-B McClung Tower.

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 interdisciplinary 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.

**CLINICAL LABORATORY SCIENCE MAJOR**

Students who complete the clinical laboratory science curriculum receive the Bachelor of Science degree with a major in clinical laboratory science 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 a final year of 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 or the National Credentialing Agency to earn certification as clinical laboratory scientists or medical technologists. Admission to the clinical year is at the discretion of the admissions committee of the clinical laboratory science program at the UT Medical Center. Admission to and successful completion of the program below does not assure admission to the clinical phase of the clinical laboratory science program.

### Requirements for the Bachelor of Science

**Clinical Laboratory Science Major**

<table>
<thead>
<tr>
<th>Year</th>
<th>Courses</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First Year</strong></td>
<td>English 101*-102*</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>1Biology 130</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Biology 140</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Chemistry 200*-130*</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>2Foreign Language – Intermediate Level*</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>3Mathematics*</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Communicating Orally (OC) course*</td>
<td>3</td>
</tr>
<tr>
<td><strong>Second Year</strong></td>
<td>4Chemistry 110</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Biochemistry and Cellular and Molecular Biology 230</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Biology 240</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Microbiology 310-319</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Humanities* (one course from List A or B)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Non-US History*</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Communicating through Writing (WC) course*</td>
<td>3</td>
</tr>
<tr>
<td><strong>Third Year</strong></td>
<td>Chemistry 310, 319</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>4Biochemistry and Cellular and Molecular Biology 310</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Microbiology 420, 429</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Microbiology 430</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>5Social Sciences*</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Humanities* (one course from List A, B, or C)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Upper-Level Distribution (one course from List A and one course from List B)</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>6Elective</td>
<td>D-3</td>
</tr>
<tr>
<td><strong>Fourth Year</strong></td>
<td>Clinical Laboratory Science course of study UT Medical Center in Knoxville (12-month program)</td>
<td>36</td>
</tr>
</tbody>
</table>

* Total 120 (minimum)

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 UT.
3. Math 115-125, Math 123-125, Math 151-152, or Math 141-142 are required for pre-clinical laboratory science 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 2 courses from the University General Education Requirement – Social Sciences. The courses must be from two departments.
6. Classics 273 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 clinical laboratory science program.

### PRE-PROFESSIONAL PROGRAMS MAJOR

#### 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>Year</th>
<th>Courses</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First Year</strong></td>
<td>English 101*-102*</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Chemistry 120*-130*</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>1Mathematics*</td>
<td>6-8</td>
</tr>
<tr>
<td></td>
<td>2Biology 130</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Biology 140</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Communication Studies 210*</td>
<td>3</td>
</tr>
<tr>
<td><strong>Second Year</strong></td>
<td>Chemistry 350-360, 369</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>3Foreign Language – Intermediate Level*</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Non-U.S. History*</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Humanities* (one course from List A or B)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>4Social Sciences*</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Computer Science 100 or 102</td>
<td>3-4</td>
</tr>
<tr>
<td><strong>Third Year</strong></td>
<td>Biochemistry and Cellular and Molecular Biology 230</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Biology and Evolutionary Biology 240</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Physics 221-222</td>
<td>8</td>
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<tr>
<td></td>
<td>Humanities* (one course from List A, B, or C)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Upper-Level Distribution (one course from List A and one course from List B)</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Communicating through Writing (WC) course*</td>
<td>3</td>
</tr>
<tr>
<td><strong>Fourth Year</strong></td>
<td>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.</td>
<td></td>
</tr>
</tbody>
</table>

**Fall Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>410 Physics for Nuclear Medicine I</td>
<td>3</td>
</tr>
<tr>
<td>411 Nuclear Instrumentation</td>
<td>3</td>
</tr>
<tr>
<td>412 Radiopharmacy</td>
<td>4</td>
</tr>
<tr>
<td>420 Clinical Nuclear Medicine I</td>
<td>4</td>
</tr>
<tr>
<td>450 Clinical Practicum I</td>
<td>4</td>
</tr>
</tbody>
</table>

**Spring Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>415 Physics for Nuclear Medicine II</td>
<td>3</td>
</tr>
<tr>
<td>425 Computer Applications in Nuclear Medicine</td>
<td>3</td>
</tr>
<tr>
<td>430 Clinical Nuclear Medicine II</td>
<td>4</td>
</tr>
<tr>
<td>460 Clinical Practicum II</td>
<td>6</td>
</tr>
</tbody>
</table>

**Summer Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>475 Nuclear Medicine Registry Review</td>
<td>2</td>
</tr>
<tr>
<td>440 Clinical Nuclear Medicine III</td>
<td>4</td>
</tr>
<tr>
<td>470 Clinical Practicum III</td>
<td>6</td>
</tr>
</tbody>
</table>

* Meets University General Education Requirement.
PRE-DENTAL 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 dentistry at UT Health Science Center, Memphis. The Doctor of Dental Surgery (DDS) degree is conferred by the College of Dentistry upon completion of four years of professional study at Memphis after completing either of the two programs options. Bulletins describing the pre-dental program options in detail may be obtained from Arts and Sciences Advising Services.

The three-year program leading to a Bachelor of Science degree with a major in pre-professional programs from the University of Tennessee, Knoxville, is based upon the program outlined below. In the three-year program, the student must complete at least 90 prescribed 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. The requirement for a major is waived for those taking their fourth year at the University of Tennessee Health Science Center, Memphis. Students must complete the last 30 hours of credit in residence at the University of Tennessee, Knoxville, before enrolling in the College of Dentistry. Admission to the College of Dentistry is at the discretion of that college; admission to and successful completion of the program below does not assure admission to the College of Dentistry. Although the Bachelor of Arts/Bachelor of Science is not required for admission to the College of Dentistry, most 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 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>First Year</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biology 130</td>
<td>4</td>
</tr>
<tr>
<td>Biology 140</td>
<td>4</td>
</tr>
<tr>
<td>Chemistry 120*</td>
<td>8</td>
</tr>
<tr>
<td>2Mathematics*</td>
<td>6-8</td>
</tr>
<tr>
<td>Communicating Orally (OC) course*</td>
<td>3</td>
</tr>
<tr>
<td>Second Year</td>
<td></td>
</tr>
<tr>
<td>Chemistry 350-360, 369</td>
<td>8</td>
</tr>
<tr>
<td>Physics 221-222</td>
<td>8</td>
</tr>
<tr>
<td>Communication through Writing (WC) course*</td>
<td>3</td>
</tr>
<tr>
<td>5Social Sciences</td>
<td>6</td>
</tr>
<tr>
<td>6Upper Level Distribution</td>
<td>6</td>
</tr>
<tr>
<td>Biochemistry and Cellular and Molecular Biology 401</td>
<td>4</td>
</tr>
<tr>
<td>7Other Biology</td>
<td>4-5</td>
</tr>
<tr>
<td>Third Year</td>
<td></td>
</tr>
<tr>
<td>Humanities*</td>
<td>3</td>
</tr>
<tr>
<td>Communication through Writing (WC) course*</td>
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<tr>
<td>Biochemistry and Cellular and Molecular Biology 401</td>
<td>4</td>
</tr>
<tr>
<td>7Other Biology</td>
<td>4-5</td>
</tr>
<tr>
<td>Total 92 minimum</td>
<td></td>
</tr>
</tbody>
</table>

Fourth Year

Completion of one year at the University of Tennessee Health Science Center in Memphis.

Total 120

1 Mathematics placement depends on high school courses and grades, ACT scores, and BA/BS requirements. Mathematics 130 or any calculus course is a prerequisite to 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.
5 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. The two courses must satisfy the University General Education Requirement in Arts and Humanities.
6 BS students must complete one course from List A and one from List B.
7 The College of Dentistry requires one of the following courses: Microbiology 310-319, 210; Ecology and Evolutionary Biology 240.

PRE-MEDICAL CONCENTRATION

The college offers a three-year program leading to the 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 at UT Health Science Center, Memphis. The Doctor of Medicine (MD) degree is conferred by the College of Medicine upon completion of four years of professional study at Memphis after completing either of the two programs options. Bulletins describing the pre-medical program options in detail may be obtained from Arts and Sciences Advising Services.

The three-year program leading to a Bachelor of Science degree with a major in pre-professional programs from the University of Tennessee, Knoxville, is based upon the program outlined below. In the three-year program, the student must complete at least 90 prescribed 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. The requirement for a major is waived for those taking their fourth year at the University of Tennessee Health Science Center, Memphis. Students must complete the last 30 hours of credit in residence at the University of Tennessee, Knoxville, before enrolling in the College of Medicine. Admission to the College of Medicine is at the discretion of that college; admission to and successful completion of the program below does not assure admission to the College of Medicine. Although the Bachelor of Arts/Bachelor of Science 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

<table>
<thead>
<tr>
<th>First Year</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>English 101*-102*</td>
<td>8</td>
</tr>
<tr>
<td>Biology 130</td>
<td>4</td>
</tr>
<tr>
<td>Chemistry 120*-130*</td>
<td>8</td>
</tr>
<tr>
<td>2Mathematics*</td>
<td>6-8</td>
</tr>
<tr>
<td>Communicating Orally (OC) course*</td>
<td>3</td>
</tr>
<tr>
<td>Second Year</td>
<td></td>
</tr>
<tr>
<td>Chemistry 350-360, 369</td>
<td>8</td>
</tr>
<tr>
<td>Physics 221-222</td>
<td>8</td>
</tr>
<tr>
<td>Communication through Writing (WC) course*</td>
<td>3</td>
</tr>
<tr>
<td>5Social Sciences</td>
<td>6</td>
</tr>
<tr>
<td>6Upper Level Distribution</td>
<td>6</td>
</tr>
<tr>
<td>Biochemistry and Cellular and Molecular Biology 401</td>
<td>4</td>
</tr>
<tr>
<td>7Other Biology</td>
<td>4-5</td>
</tr>
<tr>
<td>Total 92 minimum</td>
<td></td>
</tr>
</tbody>
</table>

Fourth Year

 Completion of one year at the University of Tennessee Health Science Center in Memphis.

Total 120

1 Pre-medicine students who have previously completed Biology 101 and 102 may substitute this sequence for Biology 130.
2 Mathematics placement depends on high school courses and grades, ACT scores, the Mathematics placement exam, and BA/BS requirements. Mathematics 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 UT, Knoxvi
4 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. The two courses must satisfy the University General Education Requirement in Arts and Humanities.
5 BS students must complete a minimum of two courses from two departments. The two courses must satisfy the University General Education Requirement in social sciences.
6 BS students must complete one course from List A and one from List B.
7 The College of Dentistry requires one of the following courses: Microbiology 310-319, 210; Ecology and Evolutionary Biology 240.
First Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biology 130*</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Biology 140*</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Mathematics 125*, 141*, or 152*</td>
<td>3-4</td>
<td>3-4</td>
</tr>
<tr>
<td>Statistics 201*</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Foreign Language - Intermediate Level*</td>
<td>6</td>
<td>6</td>
</tr>
</tbody>
</table>

Second Year

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

Fourth Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biochemistry and Cellular Molecular Biology 401-402</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Humanities*</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Upper Level Distribution</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Microbiology 210* or 310-319</td>
<td>3-5</td>
<td>3-5</td>
</tr>
<tr>
<td>Microbiology 430</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Biochemistry and Cellular Molecular Biology 209</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Ecology and Evolutionary Biology 240</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Communicating through Writing (WC) course*</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>

Total 90 minimum

PRE-PHARMACY CONCENTRATION

The college offers three program options for preparing students for the study of pharmacy at UT Health Science Center in Memphis. The Doctor of Pharmacy (PharmD) degree is conferred by the College of Pharmacy upon completion of four years of professional study at Memphis after completing any of the three programs options. Bulletins describing the pre-pharmacy program options in detail may be obtained from Arts and Sciences Advising Services.

The three-year program leading to a Bachelor of Science degree with a major in pre-professional programs from the University of Tennessee, Knoxville, is based upon the program outlined below. In the three-year program, the student must complete at least 90 prescribed 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. The requirement for a major is waived for those taking their fourth year at the University of Tennessee Health Science Center in Memphis. Students must complete the last 30 hours of credit in residence at the University of Tennessee, Knoxville, before enrolling in the College of Pharmacy. Admission to the College of Pharmacy is at the discretion of the College of Pharmacy, and must be completed the last 30 hours of 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

Concentration

First Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biology 130*</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Biology 140*</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Mathematics 125*, 141*, or 152*</td>
<td>3-4</td>
<td>3-4</td>
</tr>
<tr>
<td>Statistics 201*</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Foreign Language - Intermediate Level*</td>
<td>6</td>
<td>6</td>
</tr>
</tbody>
</table>

Total 90 minimum

• Pre-Veterinary Medicine Concentration

The following program is designed for students who wish to pursue an arts and sciences degree while preparing for the study of veterinary medicine. Students in this program must complete at least 93 credit hours while enrolled in the College of Arts and Sciences, must satisfy the Basic Skills and Distribution requirements, and must complete the last 30 hours in residence at the University of Tennessee, Knoxville, before enrolling in the College of Veterinary Medicine. A departmental major is not required. Upon successful completion of the first year (two semesters) of the professional veterinary medicine curriculum, the Bachelor of Science degree will be conferred by the College of Arts and Sciences.

Admission to the College of Veterinary Medicine is at the discretion of the Admissions Committee of that College; admission to and successful completion of this program does not assure admission to the College of Veterinary Medicine.

Requirements for the Bachelor of Science

• Pre-Professional Programs Major

Concentration

First Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biology 130*</td>
<td>4</td>
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</tr>
<tr>
<td>Statistics 201*</td>
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<td>3</td>
</tr>
<tr>
<td>Foreign Language - Intermediate Level*</td>
<td>6</td>
<td>6</td>
</tr>
</tbody>
</table>

Total 90 minimum

Fourth Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biochemistry and Cellular Molecular Biology 401-402</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Humanities*</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Upper Level Distribution</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Microbiology 210* or 310-319</td>
<td>3-5</td>
<td>3-5</td>
</tr>
<tr>
<td>Microbiology 430</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Biochemistry and Cellular Molecular Biology 209</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Ecology and Evolutionary Biology 240</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Communicating through Writing (WC) course*</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>

Total 90 minimum

Second Year

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>Biology 350-360 and 369</td>
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</tr>
<tr>
<td>Social Sciences*</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Non-U.S. History*</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Humanities*</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>

Third Year

<table>
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<tr>
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<td>Communicating through Writing (WC) course*</td>
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<td>3</td>
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</table>

Total 90 minimum

Third Year

<table>
<thead>
<tr>
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<th>Hours</th>
<th>Credit</th>
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<tbody>
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</tr>
<tr>
<td>Humanities*</td>
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<td>3</td>
</tr>
<tr>
<td>Upper Level Distribution</td>
<td>6</td>
<td>6</td>
</tr>
</tbody>
</table>
**Anthropology Major**

The anthropology major consists of 30 hours including 450 or 357 and 27 additional hours of upper-division coursework in anthropology. This course work shall be distributed as follows.

<table>
<thead>
<tr>
<th>Archaeological method and theory</th>
<th>One course from 361, 362, 461, 464.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Archaeological area</td>
<td>One course from 360, 363, 454, 462, 463, 466.</td>
</tr>
<tr>
<td>Cultural area</td>
<td>One course from 310, 311, 312, 313, 315, 316, 319, 320, 322, 323, 324.</td>
</tr>
<tr>
<td>Cultural method and theory</td>
<td>One course from 410, 411, 412, 413, 414, 415, 416, 431.</td>
</tr>
</tbody>
</table>
HONORS CONCENTRATION

The Department of Anthropology offers introductory honors courses (117, 127, 137), an honors course for juniors (357) and a Senior Honors Thesis (457), leading to an honors concentration. The honors concentration consists of at least 12 hours of anthropology honors courses, generally distributed as follows: at least 2 of the 3 introductory honors courses should be taken (during the freshman and/or sophomore years), 357 (generally during the Fall semester of the junior year) and at least three hours of 457 (generally taken during the senior year). To provide access to the honors concentration for transfer students and for students who have already completed the basic prerequisite courses, at least six hours of anthropology Honors-by-Contract courses may be completed in addition to 357 and 457. To satisfy the remaining requirements for the major, 24 additional hours of upper-division coursework in anthropology must be completed as specified above.

Permission of the instructor is required to enroll in any of the introductory honors courses. To progress into 357, grades of B or better in the introductory honors courses are required or permission of instructor if the student did not complete the introductory honors sequence. A grade of B or better and a thesis proposal approved by the instructor of 357 and by the faculty member agreeing to direct the thesis are required in order to enroll in 457. The Senior Honors Thesis (457) is expected to be either original research or an in-depth literature review of a relevant anthropological topic. To graduate with honors the student must pass 457 with a grade of B or better.

Upon completion of the above requirements, and the earning of a final cumulative university GPA of at least 3.25, the student will graduate with Honors in Anthropology.

Minor in Anthropology

Anthropology 110 or 117, 120 or 127, and 130 or 137 are prerequisites 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
Suzanne Wright, Associate Director

Professors

Brakke, M., MFA .................................................. Yale
Goldenstein, M.B., MFA ........................................ Nebraska
Habel, D.M., PhD ........................................ Michigan
Lee, B., MFA .................................................... Yale
Lee, P., MFA .................................................. Cranbrook Academy of Art
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
Brown, J., MFA ........................................ Rhode Island School of Design
Dewey, W., PhD ........................................ Indiana
Hiles, T.W., PhD ........................................ Penn State
Lowe, S., MGD ........................................ North Carolina State
Martin, F., MFA ........................................ Cranbrook Academy of Art
Neff, A., PhD ........................................ Pennsylvania
Shmerler, D., MFA ........................................ Virginia Commonwealth
Wright, S., PhD ........................................ Stanford

Assistant Professors

Bivens, E.W., MFA ........................................ Colorado
Boylan, A.L., PhD ........................................ Rutgers
Lough, W., MFA ........................................ Temple
Sprecher, J.B., MFA ........................................ Iowa
Tinajero-Baker, P., MFA ................................ Colorado
Yamamoto, K., MFA ........................................ Alberta (Canada)

The following core courses must be completed before students can progress into the program as 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 3 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 6 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 toward studio electives.

No grade below C in art courses may be applied to the Bachelor of Fine Arts major. A minimum of 42 credit hours, 300 level or above, must be earned prior to graduation.

Students may be accepted into advanced media concentrations in ceramics, drawing, painting, media arts, printmaking, sculpture, and watercolor after passing the appropriate portfolio course.
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. Twelve-thirteen credit hours of art education courses may be used as studio electives for those pursuing the BFA and licensure to teach.

**CERAMICS CONCENTRATION**

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

<table>
<thead>
<tr>
<th>Core</th>
<th>Hours</th>
<th>Credit</th>
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<tbody>
<tr>
<td>Art 101, 102, 103</td>
<td></td>
<td>.9</td>
</tr>
<tr>
<td>Art History 172* and 173* and 162* or 183*</td>
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<td>.9</td>
</tr>
<tr>
<td>Art History Electives</td>
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<td>.6</td>
</tr>
<tr>
<td>Art Sculpture 240</td>
<td></td>
<td>.1</td>
</tr>
</tbody>
</table>

One course from each of the following 5 areas: Art Drawing, Art Media Arts, Art Painting/Watercolor, Art Printmaking, and Art Sculpture.

**Concentration**

- Ceramics 221 and 222
- Art Ceramics Portfolio Review 320 (Satisfactory/No Credit Grading)
- Ceramics 321, 322 (prerequisite for all 400-level ceramics courses)
- Ceramics 421, 422
- Approved Concentration Elective: Art Sculpture 246 or 346.

**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
- Quantitative Reasoning (2 courses)*
- Natural Sciences (2 courses; at least one with laboratory)*
- Social Sciences (2 courses)*
- Cultures and Civilizations (2 courses)*
- Communicating through Writing*
- Communicating Orally*

**Total 120**

* Meets University General Education Requirement.
1 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.

**DRAWING CONCENTRATION**

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

<table>
<thead>
<tr>
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<tr>
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<td>Art History 172* and 173* and 162* or 183*</td>
<td></td>
<td>.9</td>
</tr>
<tr>
<td>Art History Electives</td>
<td></td>
<td>.6</td>
</tr>
</tbody>
</table>

One course from each of the following 6 areas – Art Drawing, Art Media Arts, Art Painting/Watercolor, Art Printmaking, and Art Sculpture.

**Concentration**

- Art Drawing 212 (may be repeated)
- Art Drawing 312 (Portfolio Review) (Satisfactory/No Credit Grading)
- Art Drawing 311 (for two semesters)
- Art Drawing 411 (for two semesters)
- Approved Concentration Electives – 6 hours from Art Drawing 219/419 (maximum 6 hours); Art Painting 213, 214, 215, 216;
- Art Printmaking 262, 263

**Total 120**

* Meets University General Education Requirement.
1 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.

**MEDIA ARTS CONCENTRATION**

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

<table>
<thead>
<tr>
<th>Core</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Art 101, 102, 103</td>
<td></td>
<td>.9</td>
</tr>
<tr>
<td>Art History 172* and 173* and 183* or 162*</td>
<td></td>
<td>.9</td>
</tr>
<tr>
<td>Art History Electives</td>
<td></td>
<td>.3</td>
</tr>
<tr>
<td>Art Media Arts 231, 235, 236</td>
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<td>.9</td>
</tr>
</tbody>
</table>

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

**Concentration**

- Art Media Arts 330 (Portfolio Review) (Prerequisite to 300- and 400-level courses) (Satisfactory/No Credit Grading)
- Art Media Arts 433
- Art Media Arts 435 and/or 436
- Art Media Arts 450
- 300- and 400-level electives in Media Arts

**Total 120**

* Meets University General Education Requirement.
1 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.

**PAINTING CONCENTRATION**

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

<table>
<thead>
<tr>
<th>Core</th>
<th>Hours</th>
<th>Credit</th>
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<tbody>
<tr>
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<td>.9</td>
</tr>
<tr>
<td>Art History 172* and 173* and 162* or 183*</td>
<td></td>
<td>.9</td>
</tr>
<tr>
<td>Art History Electives</td>
<td></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**

- Painting 214 (may be repeated)
- Art Painting 314 (Portfolio Review) (Satisfactory/No Credit Grading)
- Painting 313 (for two semesters)
- Painting 413 (for two semesters)
- Approved Concentration Electives – 6 hours from Art Drawing 219/419 (maximum 6 hours); Art Painting 213, 214, 215, 216;
- Art Drawing 212

**Total 120**

* Meets University General Education Requirement.
1 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.
PRINTMAKING CONCENTRATION

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

Core                  Hours Credit
Art 101, 102, 103                                             9
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
Printmaking 200-level course                                     .3
Printmaking 360 (Portfolio Review)                               .0
Printmaking 300- and 400-level courses                           .20

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.        .18

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*                                    .3
Communicating Orally*                                           .3

Total 120

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

SCULPTURE CONCENTRATION

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

Core                  Hours Credit
Art 101, 102, 103                                             9
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 Sculpture 200-level course                                  .3
Art Sculpture 340 (Portfolio Review)                            .0
Art Sculpture 300- and 400-level courses                       .20

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.        .18

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*                                    .3
Communicating Orally*                                           .3

Total 120

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

WATERCOLOR CONCENTRATION

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

Core                  Hours Credit
Art 101, 102, 103                                             9
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
Painting 215 (may be repeated)                                 .3
Art Painting 316 (Portfolio Review)                            .0
Art Painting 315 (for two semesters)                          .8
Art Painting 415 (for two semesters)                          .12
Approved Concentration Electives – 6 hours from the following-Art
   Drawing 219/419 (maximum 6 hours); Art Painting 213, 214;
   Art Drawing 212.                                            .6

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.        .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
Communicating through Writing*                                    .3
Communicating Orally*                                           .3

Total 120

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

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, publication designs, or elec-
tronic media.

Transfer students are advised that a minimum of 21 hours in
studio courses must be earned at the University of Tennessee,
Knoxville, as well as Art Design 252. Transfer students who expect
Requirements for the Bachelor of Fine Arts • Graphic Design Major

Art Core
Art 101, 102, 103 ........................................... 9
Art History 172*, 173* ...................................... 6
Art Drawing 211 ............................................. 3
1Art 150 ..................................................... 3

Graphic Design
Art Graphic Design 251, 252, 251, 352, 356, 451, 452* (OC), 455 (in sequence) ............... 24
Art Graphic Design 350 (Portfolio Review) .......................... 0
Art Graphic Design 444 (maximum 6 hours) and/or 456 .................. 8

Required Design and Professional
Art Graphic Design 405 .................................. 3
Art Graphic Design 400 .................................. 3
Art Graphic Design 450 .................................. 3
Art Graphic Design 254, 256, 259, 354, 396, 405, 453, 454, 459 (choose one) ............. 3

Studio
Choose from: Art Ceramics, Art Drawing, Art Media Arts, Art Painting, Art Watercolor, Art Printmaking, Art Sculpture .......... 18

Art History
Electives (must be upper division) ................................ 3

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

English 101*, 102* or their equivalent ................................ 6
Quantitative Reasoning – (2 courses; Computer Science 100 or 102 required) ......................... 6
Natural Sciences (2 courses; at least one with laboratory)* ...... 7
Social Sciences (2 courses)* .................................. 6
2Cultures and Civilizations (2 courses)* ............................ 6
Arts and Sciences Non-Art Elective (WC course)* ............. 3

Total 120

* Meets University General Education Requirement.
1 Should be taken spring semester of the freshman year or as soon as possible. This course is required for application to Art 350 Portfolio Review.
2 Cultures and Civilizations requirement must be filled by completing the foreign language option.

ART HISTORY MAJOR

Requirements for the Bachelor of Arts • Art History Major

Prerequisites
Art History 172, 173, and 162 or 183 with a grade of C or better .... 9

Major
Art History courses numbered 300 and above ................. 18
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
**Instructor**  
Singletary, T., MS  .............................................. Colorado State  

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

**Clinical Faculty**  
Baker, S., MA .................................................... Tennessee  
Barnes, V., MA .................................................... Tennessee  
Beason, H., AuD .................................................. Tennessee  
Beeler, J., MA ...................................................... Tennessee  
Buehler, V., MA ..................................................... Tennessee  
Cutler, M., PhD ..................................................... Georgia  
Donels, E., MA ...................................................... Tennessee  
Humphrey, E., AuD ................................................. Tennessee  
Hume, S., PhD ...................................................... Tennessee  
Jenkins, K., MA ...................................................... Tennessee  
Noss, E., MA ......................................................... Tennessee  
Pylyer, E., AuD ....................................................... Arizona School of Health Sciences  
Schay, N., AuD ..................................................... Tennessee  
Searfoss, M., AuD ................................................... Tennessee  
Sherridan, C., MA .................................................. Tennessee  
Valentine, D., PhD ................................................ Tennessee  
Vaughn, T., MS ...................................................... Eastern Kentucky  
Webb, P., MEd .................................................... Florida  
Yeager, K., AuD ..................................................... Tennessee  

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, 433, 435, 461, 473, 475, 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 2.70 (or 3.00 in the last 30 hours of enrollment), 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 6 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.

**AUDIOLGY MAJOR**

Admission to the major requires a minimum cumulative GPA of 3.00 after completion of at least 60 credit hours. Admission to the major does not guarantee admission to the graduate program.

The audiology major consists of 31 hours in audiology and speech pathology courses including 300, 302, 303, 305, 306, 320, 433, 435, 461, 473, and 473.

**SPEECH PATHOLOGY MAJOR**

Admission to the major requires a minimum cumulative GPA of 3.00 after completion of at least 60 credit hours. Admission to the major does not guarantee admission to the graduate program.

The speech pathology major consists of 37 hours including audiology and speech pathology 300, 302, 303, 305, 306, 320, 433, 435, 461, 473, 475, and 474; and one course from the following – Anthropology 411; English 371, 372, 471, 472, 474, 476, 477; French 425, 429; German 435, or Spanish 430.

**DEPARTMENT OF BIOCHEMISTRY AND CELLULAR AND MOLECULAR BIOLOGY**

http://web.bio.utk.edu/bcmb/  
Bruce D. McKee, Head  

**Professors**  
Bruce, B., PhD ................................................. California (Berkeley)  
Ganguly, R., PhD ................................................. Nebraska  
Howell, E., PhD .................................................. Lehigh  
Joy, D. (Distinguished Scientist), DPhil  ........................................... Oxford (UK)  
Koontz, J., PhD .................................................... Kentucky  
Mckee, B., PhD .................................................... Michigan State  
Millhorn, D., PhD .................................................. Ohio State  
Mullin, B., PhD ...................................................... North Carolina State  
Palladini, D., PhD ................................................ Louisiana State  
Roberts, D., PhD ................................................... California (Davis)  
Serperus, E., PhD ................................................ Hacettepe (Turkey)  
Smith, J., PhD ...................................................... London (UK)  

**Associate Professors**  
Alexandre, G., PhD ................................................. Claude Bernard Lyon (France)  
Fernandez, E., PhD ................................................. Loyola  
Hall, J., PhD ....................................................... Illinois  
Park, J., PhD ......................................................... Texas A&M  
Prosor, R., PhD ..................................................... Illinois  
von Arnim, A., PhD ............................................... East Anglia (UK)  

**Assistant Professors**  
Baudry, J., PhD .................................................... Pierre and Marie Curie (France)  
Goodchild, R., PhD ................................................. Newcastle (UK)  
Guo, H., PhD ....................................................... Harvard  
Jain, N., PhD ......................................................... Brandeis  
Kitazono, A., PhD ................................................ Nagasaki (Japan)  
Labrador, M., PhD ................................................ Madrid (Spain)  
Nebenfuhr, A., PhD ................................................ Oregon State  
Shpak, E., PhD ......................................................... Ohio  
Venkatachalam, S., PhD .......................................... Ohio State  

**Adjunct and Research Faculty**  
Allison, P., PhD .................................................... Penn State  
Allison, D., MS ...................................................... Tennessee  
Biggerstaff, J., PhD ............................................... Brunel (UK)  
Georghiou, S., PhD ............................................... Manchester (UK)  
Mazur, P., PhD ...................................................... Harvard  
McDonald, W., PhD ............................................... Vanderbuilt  
O’Neill, H., PhD .................................................... Dublin (Ireland)  
Wang, Y., MD ....................................................... Harbin Medical (China)  
Wimalasena, J., PhD ............................................. Colorado Medical  

Biochemistry, cell biology, and molecular biology study the function of cells and organisms at the molecular level. The concentration includes the study of the structure and function of proteins, lipids, carbohydrates, DNA and RNA, as well as how these and other molecules control cellular and organismal function. The curriculum prepares students for a variety of careers in biological research, biotechnology, the health professions or education.

Students wishing to emphasize study in this area elect to major in biological sciences with a concentration in biochemistry and cellular and molecular biology. See the description of the major and concentration under Division of Biology for requirements.
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, 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. To declare biology as a major, Chemistry 120-130 and Biology 111-112 or 130 must be completed with a minimum grade of C.

**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.

**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 308, 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, 404, 416, 419, 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 3.50 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. Fifteen of these hours must be ecology and evolutionary biology courses, (304, 305, 413 are not allowed for credit in the concentration) including one course from each of the following categories.
  - Ecology – Ecology and Evolutionary Biology 433*, 446*, 470*, 484; Microbiology 470.
  - 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 evolutionary biology 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 major in biological sciences with a concentration in ecology and evolutionary biology, while achieving at least a grade of B in the individual courses applied to the concentration, maintaining a GPA of at least 3.50 in this concentration, and an overall GPA of at least 3.25.
- Complete 9 hours of honors course work from: Undergraduate Research 400 and Independent Studies 493; 490 Undergraduate Seminar (1 credit); Honors-by-Contract courses at 300 level or higher.
- Complete Senior Honors Thesis 407 with thesis to be approved by student’s committee.

**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 students who have completed the required 300-level microbiology courses with a minimum grade point average of 3.50 in microbiology courses and 3.25 for all courses. Students must successfully complete an additional 15 hours of
400 level microbiology courses that must include the undergraduate research courses 401 and 402 (honors course), and write a thesis based on their research. Students must also complete nine additional hours of honors courses in addition to 402.

PLANT BIOLOGY CONCENTRATION

The plant biology concentration consists of 29-34 hours including

- Chemistry 350-369 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 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 3.50 in all the 300-level and above courses from the concentration and an overall GPA of 3.20.
- A minimum of 4 hours of Ecology and Evolutionary Biology 400 (undergraduate research) during the junior and senior year.
- A senior thesis that is acceptable to the student's committee.

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

Minor in Biological Sciences

A minor in the biological sciences consists of 16 hours. Pre-requirements 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 the biology department, and more that 3 hours of undergraduate research may be credited.

DEPARTMENT OF CHEMISTRY

http://www.chem.utk.edu

Craig E. Barnes, Head

Professors

Adcock, J.L., PhD ................................................. Texas
Baker, D.C., PhD ....................................................... Ohio State
Barnes, C.E., PhD ...................................................... Stanford
Bartmess, J.E., PhD ................................................. Northwestern
Bursten, B.E. (Dean), PhD ........................................ Wisconsin
Compton, R.N., PhD ............................................. Tennessee
Cook, K.D., PhD ..................................................... Wisconsin
Dammon, M.D., PhD ............................................. Massachusetts
Feigere, C.S., PhD .................................................. Colorado
Guiochon, G.A. (Distinguished Scientist, Science Alliance Center of Excellence), PhD ........................................ Paris (France)
Harrison, R.J. (Joint Faculty), PhD ................................ Cambridge (UK)
Hinde, R.J. (Associate Dean), PhD ................................. Chicago
Kabalka G.W. (Robert H. Cole Professor), PhD .................. Purdue
Kliben, E. M. (Joint Faculty), PhD ................................ Minnesota
Kovac, J.D., PhD .................................................... Yale
Larese, J.Z., PhD .................................................. Akron
Mays, J.W. (Distinguished Scientist, Science Alliance Center of Excellence), PhD ........................................ Akron
Musfeldt, J.L., PhD .................................................. Florida
Petersen, J.D. (President), PhD .................................... California (Santa Barbara)
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, I. C. (Associate to the Chancellor), PhD ............................ North Carolina State
Xue, Z., PhD ........................................................... California (Los Angeles)

Associate Professor

Schell, F.M., PhD ....................................................... Indiana

Assistant Professors

Best, M.D., PhD ...................................................... Texas
Campagna, S.R., PhD ............................................... Princeton
Foister, S., PhD ..................................................... California Institute of Technology
Vogt, F., PhD ......................................................... Karlsruhe (Germany)
Zhao, B., PhD ......................................................... Akron

The Department of Chemistry presents to the next generation of chemists and chemically literate citizens an integrated program of teaching and research that will prepare them to respond responsibly to current and future national needs. To satisfy our diverse clientele, the educational program is continuously 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.

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.

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 grades, 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 2.50 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.
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 information.

First Year

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<tr>
<th>Course</th>
<th>Hours</th>
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<tr>
<td>Chemistry 120-130 or (preferably) 128-138</td>
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<tr>
<td>Mathematics 141-142</td>
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<td>Chemistry 230</td>
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Third Year

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Fourth Year

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<td>Biochemistry and Cellular and Molecular Biology 401</td>
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<td>Electives</td>
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Total 126-132

1 Preferably chosen from German, French, Russian, or Japanese; the College of Arts and Sciences requires that a student demonstrate intermediate-level competence in whatever foreign language is chosen.

2 The distribution requirements of the College of Arts and Sciences are satisfied by taking non-U.S. history (6 hours), social science (6 hours), humanities (6 hours), and upper level distribution (3 hours in U.S. studies and 3 hours in foreign studies). The number of credit hours shown in each year of the curriculum are merely intended as guidelines.

3 It is recommended that a portion of these elective hours be applied to advanced courses in biochemistry and cellular and molecular biology, mathematics, physics, or chemical, metallurgical, and polymer engineering.

4 To be chosen from Chemistry 400, 401, 408, 420, 450, and 490.

BACHELOR OF SCIENCE • CHEMISTRY MAJOR

The Bachelor of Science degree is available to students who desire a more flexible program. Prerequisites to the major are Chemistry 120-130 or 128-138 and Mathematics 141-142 or 151-152. Corequisites to the major are Physics 221-222, 135-136, or 137-138.

Major 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 or 358-368, 369 (8 hours); or 471-481, 479 (8 hours), or 473-483, 479 (8 hours).

HONORS CONCENTRATION

Candidates for the honors concentration must fulfill all of the requirements for either the Bachelor of Science in Chemistry or the regular Bachelor of Science degree and must satisfy the following stipulations: they must complete with a grade of C or better Mathematics 141-142, Physics 135-136 or 137-138, and Chemistry 473-483; they must complete a senior research project and thesis by successfully completing Chemistry 400 and 408; they must take at least 12 hours of honors courses; and they must have an overall university GPA of 3.25 with a chemistry GPA of at least 3.25.

DEPARTMENT OF CLASSICS

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

David W. Tandy, Head

Professors

Craig, C.P. (Lindsay Young Professor), PhD . North Carolina
Martin, S.D., PhD . Michigan
Tandy, D.W. (Distinguished Professor of Humanities), PhD . Yale

Associate Professor

Sutherland, E.H., PhD . California (Berkeley)

Assistant Professors

Granger, C.D., PhD . Cornell
Lafferty, M.K., PhD . Toronto (Canada)
Sklenar, R.J., PhD . Michigan
Van de Moortel, A., PhD . Bryn Mawr

Research Professors

Gesell, G.C., PhD . North Carolina
Lanmon, M.K., PhD . Pennsylvania

Lecturers

Bartera, S., MA . Urbino (Italy)
Downey, S.J., PhD . Toronto (Canada)

Adjunct Faculty

Dessel, J.P., PhD . Arizona
Dzon, M., PhD . Toronto (Canada)
Fitzgerald, J.L., PhD . Chicago
Heffernan, T.J., PhD . Cambridge (UK)
Jones, D.W., PhD . Chicago
Kukulowski, M., PhD . Toronto (Canada)
Shaw, J.C., PhD . Washington (St. Louis)
Shepardson, C., PhD . Duke
Stiebert, J., PhD . Glasgow (UK)

The department’s programs are designed to allow students to understand the foundations of the western cultural tradition. This
is done through a focus on the classical languages and literatures, archaeology, art, mythology and religion, political and social history. Through these studies, students develop skills in critical thinking, reading, writing and speaking. They also develop a sense of the ways in which both shared traditions and personal creativity inform one’s choices, and of the opportunities for good citizenship in a complex world.

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 test. A student who earns a grade of B or better in this examination is eligible for credit toward graduation. A student who omits any course in a sequence may receive credit for it by passing the appropriate proficiency examination.

CLASSICS MAJOR
CLASSICAL CIVILIZATION CONCENTRATION

The concentration in classical civilization consists of 27 hours. The required core of the major is Classics 201. Nine hours may be from any Classics course numbered 200 or above (excluding Classics 273); the remaining 15 hours must be from Classics 251-252, 261-264, any Classics course numbered 300 or above, History 366, and Philosophy 320. Students are encouraged to satisfy the foreign language requirement with Greek or Latin.

HONORS CLASSICAL CIVILIZATION CONCENTRATION

The honors classical civilization concentration consists of 29 hours. The required core of the major is Classics 201. Nine hours may be from any Classics course numbered 200 or above (excluding Classics 273). Fifteen hours must include Classics 251-252 or 261-264 with the remaining 9 hours to be from any Classics course numbered 300 or above, History 366, and Philosophy 320. The student must pass Classics 201 with a B+ or better. To graduate with Honors, the student must maintain a minimum GPA of 3.50 in Classics courses and a minimum cumulative UT GPA of 3.50. The student must pass Classics 201 and any 6 hours from Classics courses numbered 300 or above, History 366, and Philosophy 320. Students are encouraged to satisfy the foreign language requirement with Greek or Latin.

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 chosen from any courses in the Classics Department numbered above 200 (excluding Classics 201 and 273), History 366, and Philosophy 320.

HONORS GREEK CONCENTRATION

The honors Greek concentration consists of 29 hours. Eighteen hours of Greek language courses numbered above 200 are required, plus 9 from the following – any courses in the Classics Department numbered above 200 and above (excluding Classics 201 and 273), History 366, and Philosophy 320. The student must maintain a minimum GPA of 3.50 in Greek language courses and a minimum cumulative UT GPA of 3.50. In addition, of the 9 non-language hours described above, 6 must be in courses numbered 300 or higher. The student must take a minimum of 15 hours of honors courses, not all of which need to be in the major subject area. The student will present an honors thesis, for which 2 hours of independent study credit may be earned.

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 chosen from any courses in the Classics Department numbered above 200 (excluding Classics 201 and 273), History 366, and Philosophy 320.

HONORS LATIN CONCENTRATION

The honors Latin concentration consists of 29 hours. Eighteen hours of Latin language courses numbered above 200 are required, plus 9 from the following – any courses in the Classics Department numbered above 200 and above (excluding Classics 201 and 273), History 366, and Philosophy 320. The student must maintain a minimum GPA of 3.50 in Latin language courses and a minimum cumulative UT GPA of 3.50. In addition, of the 9 non-language hours described above, 6 must be in courses numbered 300 or higher. The student must take a minimum of 15 hours of honors courses, not all of which need to be in the major subject area. The student will present an honors thesis, for which 2 hours of independent study credit may be earned.

Minor in Classical Civilization

A minor in classical civilization consists of 18 hours including Classics 201 plus any 6 hours from Classics courses numbered above 200 or above (excluding Classics 273). The remaining 9 hours may be from Classics 261-264, 251-252, any Classics course numbered 300 or above, History 366, and Philosophy 320.

Minor in Greek

The Greek minor consists of 18 hours including 12 hours of Greek language courses numbered above 200, and 6 hours chosen from any Classics courses numbered 200 or above (excluding Classics 201 and 273), History 366, and Philosophy 320.

Minor in Latin

The Latin minor consists of 18 hours including 12 hours of Latin language courses numbered above 200, and 6 hours chosen from any Classics courses numbered 200 or above (excluding Classics 201 and 273), History 366, and Philosophy 320.

COLLEGE SCHOLARS PROGRAM

Christopher P. Craig, Classics, Director

COLLEGE SCHOLARS MAJOR

College scholars is a major with selective admission. For details contact the director. All college scholars must enroll in one of the College Scholars Seminars 317-318 each term. They are encouraged to complete work in College Scholars Honors 491-492-493. Each student must complete a substantial piece of research, scholarship or creative imagination. College Scholars 498 is the appropriate course to use to receive credit for this work.
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 6 hours at the 200-level and 3 hours of Geology 493 may be counted toward the minor.
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 aims to satisfy society’s increasing need for a citizenry skilled in critical thought and communication.

Students planning to teach English in public schools should consult the College of Education, Health, and Human Sciences.
CREATIVE WRITING CONCENTRATION

The concentration requires a two-course sequence in poetry or fiction writing (363-463 or 364-464); three additional writing courses; and one special topics course, major authors course, or senior seminar.

LITERATURE CONCENTRATION

The concentration requires 376 to be taken, if possible, near the beginning of the student’s major program; one course in American literature; one course in literature before 1800; one additional literature course; one special topics course, major authors course, or senior seminar; and one English elective, preferably in a different concentration within English.

RHETORIC AND WRITING CONCENTRATION

The concentration requires 355 to be taken near the beginning of the student’s major program; two of the following: 455, 495, 496; one additional course in rhetoric or writing; one special topics course, major authors course, or senior seminar; and one English elective.

TECHNICAL COMMUNICATION CONCENTRATION

The concentration requires 360 to be taken near the beginning of the student’s major program; two of the following: 460, 462, 466; one additional course in rhetoric or writing; one special topics course, major authors course, or senior seminar; and one English elective.

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 CONCENTRATIONS (LITERATURE, RHETORIC AND WRITING, TECHNICAL COMMUNICATION, INDIVIDUALIZED PROGRAM)

For students who qualify, the English Department offers specially designed courses at all levels. The first-year and second-year 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 3.25 or better GPA, a 3.5 or better grade point in English courses, and the student must have completed 12 hours in honors courses in English at the 200-400 levels, including 398, Junior-Senior Honors Seminar, and 498, Senior Honors Thesis. Any 300 or 400-level courses in English may be taken for honors credit through the Honors-by-Contract program with the permission of the instructor. Courses taken at the graduate level for undergraduate credit may be petitioned to count for honors credit in English. Depending on the topic, 398 may be petitioned to count for one of the other English major requirements as well.

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.

DEPARTMENT OF GEOGRAPHY

http://web.utk.edu/~utkgeog/
Shih-Lung Shaw, Interim Head

Professors
Bell, T.L., PhD .............................................. Iowa
Foresta, R.A., PhD ...........................................Rutgers
Harden, C.P., PhD .......................................... Colorado
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 Professors
Grissino-Mayer, H., PhD ...................................... Arizona
Orvis, K., PhD ............................................... California (Berkeley)

Assistant Professors
Drever, A., PhD ........................................ California (Los Angeles)
Kalafsky, R., PhD ........................................ New York (Buffalo)
Tran, L.T., PhD ........................................... Hawaii

Adjunct Faculty
Gripshover, M.M., PhD ..................................... Tennessee
Liu, C., PhD ............................................. Tennessee
Tankersley, R.D., PhD .................................... Tennessee
Zanetta, M.C., PhD ......................................... Ohio State

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, 366, 371, 373, or 374; and nine additional credits, at least 6 of which must be taken at the 400 level. No more than 3 hours of Geography 490 may be counted toward the major.

Students who enter the major with more than 60 hours of credit, and who have completed a laboratory science sequence other than geography, may petition the department to substitute certain upper-division physical geography courses for 131 and/or 132. 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 must maintain an overall GPA of 3.25 to graduate with honors. Twelve hours of honors work must be taken, including Geography 497 and 498 (Honors: Senior Thesis) under the direction of a faculty mentor. A written final copy of the thesis must be submitted to the Department of Geography. Balance of credit hours may be taken in honors courses or through honors-by-contract arrangements. Students should consult their advisor 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.
The Department of History offers honors sections of the western civilization, world civilization, and United States history survey courses. These honors courses are open to non-majors as well. Students interested in honors work at any level should consult the department's honors coordinator.

Minor in History

History 241-242 or 261-262 (or honors equivalents) are prerequisites to a minor which consists of 15 hours of courses numbered 200 or above, including at least 6 hours in United States history and 9 upper-division hours.

INTERDISCIPLINARY PROGRAMS

Robert J. Hinde, 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 Africana studies, American studies, Asian studies, cinema studies, comparative literature, environmental studies, global studies, Judaic studies, Latin American studies, linguistics, medieval studies, and women's studies. See the following individual program descriptions for the concentration and/or minor requirements.

INTERDISCIPLINARY PROGRAMS MAJOR

• AFRICANA STUDIES CONCENTRATION

Africana Studies 201, 202 or 235, 236 are required in the concentration which consists of 24 hours from the Africana studies curriculum. At least 15 hours must represent upper-division credits. Majors are required to take Africana Studies 432, preferably in their senior year. A maximum of 6 hours in Africana Studies 492 and 493 combined can be applied toward the Africana studies concentration.

Minor in Africana Studies

Africana Studies 201, 202 or 235, 236 are required in the minor which consists of 15 hours, at least 9 of which must be upper-division credits. A maximum of 3 hours in Africana Studies 492 and 493 combined can be applied to the minor.

INTERDISCIPLINARY PROGRAMS MAJOR

• AMERICAN STUDIES CONCENTRATION

Michael Fitzgerald, Political Science, Chair

English 231 and either 232 or 233 are prerequisites 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 6 hours of approved courses chosen from 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 3 to 6 hours of American Studies 493 (Independent Study) are recommended for majors in their senior year. A list of approved elective courses is published annually.

All majors and prospective majors should contact the chair of the program.

Minor in American Studies

The American studies minor consists of at least 15 hours of coursework chosen from the program's list of electives, including American Studies 310 and 12 additional hours from at least two different disciplines.
INTERDISCIPLINARY PROGRAMS MAJOR
• ASIAN STUDIES CONCENTRATION

Yang Zhong, Political Science, Chair

Prerequisites to the concentration are Asian Studies 101-102. Corequisite to the concentration is competence in a major Asian language of the chosen geographical-cultural area. Competence is defined as the successful completion of the 200-level sequence of that language, or by demonstration of equivalent mastery.

The Asian studies concentration consists of 26 credit hours from the upper-division courses of Asian studies and approved departmental offerings. Twelve of the hours must be taken from courses listed within one of the four geographical-cultural areas (Islamic World, South Asia, China, Japan), and 6 of those 12 hours must come from Subdivision A and 6 from Subdivision B. Subdivision A includes art, literature, music, philosophy, and religious studies. Subdivision B includes anthropology, economics, geography, history, political science, and sociology.

Six of the 26 hours must be taken from courses listed for other geographical-cultural areas.

Minor in Asian Studies

The Asian studies minor consists of Asian Studies 101-102 and 15 credit hours at the 200 level and above. Twelve credit hours must be taken from courses within one of the four geographical-cultural areas. Six credit hours must come from Subdivision A and 6 from Subdivision B. Three hours must be taken from courses in another geographical-cultural area.

CINEMA STUDIES

Christine Holmlund, Modern Foreign Languages and Literatures, Chair

Minor in Cinema Studies

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 336; and 9 additional hours from any courses in cinema studies, courses cross-listed with cinema studies, or from the following approved courses – Journalism and Electronic Media 275, 336, 436. 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 9 hours of literature in a foreign language in courses numbered 300 or above. The remaining 9 hours should include literature courses, either in English or in a foreign language, numbered 300 or above, from at least two of the following departments – Classics, English, Modern Foreign Languages and Literatures, and Religious Studies. Certain courses in philosophy, theatre, and interdisciplinary programs may be substituted with the approval of the chairperson of the comparative literature program.

Minor in Comparative Literature

A minor in comparative literature consists of 18 hours including Comparative Literature 202 and either Comparative Literature 401 or 402, 6 hours of literature in a foreign language in courses numbered 300 or above, and 6 hours of literature courses numbered 300 or above in a different department. These 6 hours may be either in English or in a foreign language and should be chosen from the following departments – English, Modern Foreign Languages and Literatures, and Religious Studies. Certain courses in philosophy, theatre, and interdisciplinary programs may be substituted with the approval of the chairperson of the comparative literature program. Minors in comparative literature are strongly encouraged to continue study of a foreign language beyond the minimum requirement.

INTERDISCIPLINARY PROGRAMS MAJOR
• ENVIRONMENTAL STUDIES CONCENTRATION

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.

Core

(a) 15 hours from Geography 345; Sociology 360 or 464 or 465 (one only); Philosophy 245; Economics 362 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, 433, 434, 436; Environmental and Soil Sciences 462.

Specialty

Twelve hours at the 300 level or above in one of the following departments – Biochemistry, Cellular and Molecular Biology; Biosystems Engineering and Soil Science; Chemistry; Earth and Planetary Sciences; Ecology and Evolutionary Biology; Economics; 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 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 29-30 credit hours in the form of ten courses. No course may be counted toward more than one of the following categories. No more than 3 credit hours may be taken under the 300 level. Courses are to be distributed as follows.
A. 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. Three hours of independent study or off-campus study can be used to substitute for a core course.

**Track I – Global Society and Culture**
Anthropology 315; History 421; Comparative Literature 202; English 331, 454; Geography 345; Musicology 290; Philosophy 393; Religious Studies 302, 333; Women’s Studies 360.

**Track II – Global Politics and Economy**
Agricultural Economics 420; Economics 322, 421; Forestry, Wildlife, and Fisheries 420; Geography 351; History 374; Philosophy 393; Political Science 350, 365, 463, 470, 471, 474; Retail and Consumer Sciences 421; Sociology 442, 446; Women’s Studies 360.

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

C. 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 17-18 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.
- 9 hours selected from Art History 425, 431, 475; German 350; History 369, 395, 484; Philosophy 322.

Students should contact the program advisor early in planning a Judaic studies 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 hours are to be selected from either Spanish 323 or Portuguese 315, 326. The remaining hours are to be chosen from Anthropology 313, 316, 319; Geography 373; History 360, 361, 460, 461, 462, 475; Political Science 456; Portuguese 430, 432; Spanish 331, 333, 344, 401, 402, 465, 479.

The Brazilian studies track requires 27 upper-division hours offered by at least three different academic departments. Of these hours, a minimum of 6 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, 326, 430, 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. Six of the hours are to be the Introduction to Latin American Studies sequence 251-252; 3 of the hours are to be selected from either Spanish 323 or Portuguese 315, 326; the remaining 9 hours are to be selected from the courses listed in either track of the concentration.

**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 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
- 9 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, 431, 435, 436, 472, 474, 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 3 hours selected in consultation with a linguistics advisor from Anthropology 411; Audiology and Speech Pathology 302, 320; Foreign Language/ESL Education 455; French 421, 422; Linguistics 321, 400, 431, 435, 436, 472, 474, 476, 477, 485, 490, 491, 492, 493, Philosophy 472; Psychology 400, 424; Spanish 421, 422; Communication Studies 300, 320; Theatre 326.
- 15 additional hours – Audiology and Speech Pathology 305; English 371 or 372; Linguistics 423 and 425 or 426; plus 3 hours selected in consultation with a linguistics advisor.

**INTERDISCIPLINARY PROGRAMS MAJOR**

**• MEDIEVAL STUDIES CONCENTRATION**

*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.

**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.

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).

**Minor in Medieval Studies**
A minor in medieval studies consists of Medieval Studies 201 and 403 and 12 additional hours distributed among the categories listed above for the major. Each student's program, major or minor, must be approved in advance by the Medieval Studies Coordinating Committee chairperson.

**INTERDISCIPLINARY PROGRAMS MAJOR**

**• WOMEN’S STUDIES CONCENTRATION**

*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 3 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), Contempora-

**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.

**DEPARTMENT OF MATHEMATICS**

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

*Michael Frazier, Head*

**Professors**
- Alexiadis, V., PhD .................................................. Delaware
- Anderson, D.F., PhD .................................................. Chicago
- Daverman, R.J., PhD ................................................. Wisconsin
- Dobbs, J.D.E., PhD ................................................. Cornell
- Dyak, J., PhD .......................................................... Warsaw (Poland)
- Feng, X., PhD .......................................................... Purdue
- Frazier, M., PhD ..................................................... California (Los Angeles)
- Gavrilits, S., PhD ..................................................... Moscow State
- Gross, L., PhD ......................................................... Cornell
- Hinton, D.B., PhD ..................................................... Tennessee
- 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 (Poland)
- Schaefer, P.W., PhD ................................................ Maryland
- Simpson, H., PhD ..................................................... California Institute of Technology
- Soni, R.P., PhD ........................................................ Oregon State
- Stephenson, K.R., PhD .............................................. Wisconsin
- Sundberg, C., PhD ..................................................... Wisconsin
- Tzermias, P., PhD ..................................................... Manchester (UK)
- Wade, W.R., PhD ..................................................... California (Riverside)
- Wagner, G.G., PhD ................................................... Duke
- Xiong, J., PhD ........................................................ North Carolina

**Associate Professors**
- Chen, X., PhD ........................................................ Rutgers
- Collins, C., PhD ........................................................ Minnesota
- Denuzer, J., PhD ...................................................... ETH (Zurich)
- Freire, A., PhD ........................................................ Princeton
- Schulze, T., PhD ...................................................... Northwestern
- Todorova, G.H., PhD ................................................. Moscow State
- Tzermias, P., PhD ..................................................... California (Berkeley)
HONORS CONCENTRATION

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.

For purposes of the mathematics honors requirements, the upper-division mathematics GPA (MGPA) consists of the GPA for Mathematics 300 (307), all mathematics courses used to fulfill the requirements for part (2) of the mathematics major, and mathematics graduate courses numbered 510 or higher.

Students who wish to participate in the honors concentration must meet the requirements for, and officially declare, a mathematics major with honors concentration. A student may declare this concentration after completing Mathematics 300 (307) if his/her cumulative MGPA is at least 3.4. The mathematics honors concentration must be declared prior to the last 60 hours of enrollment (usually this means prior to the beginning of the junior year). The 60 hours requirement may be waived for students having a large number of transfer, AP, or other credits not earned at the University of Tennessee.

To continue as a mathematics major with honors concentration the student must:

- Maintain a 3.4 or higher cumulative MGPA. (Any mathematics honors student whose cumulative MGPA drops below 3.4 in a given semester may keep the honors concentration provided the cumulative MGPA returns to 3.4 after the subsequent semester and remains above 3.4 until graduation.)
- Attend at least three mathematics-related public lectures (such as the Mathematics Junior Colloquium or a departmental seminar) during each semester.
- Make adequate progress towards completing the mathematics honors thesis at least one full semester prior to graduation.

The requirements to graduate with honors in mathematics are the same as those for the mathematics major except in part (2) only six courses at the 300-400 level are required, and at least two 400-level two-semester sequences must be taken, at least one of which must be an honors sequence. Moreover, the following requirements must be met:

- Graduate with an overall GPA of at least 3.25 and an MGPA of at least 3.4.
- Complete at least 4 hours of Mathematics 497.
- Complete at least 3 hours of Senior Honors Thesis (Mathematics 498) and submit a completed thesis at least 30 calendar days prior to the end of the final semester of enrollment.
- Complete a total of 24 hours of honors courses or mathematics courses numbered 510 or higher (except seminars) for undergraduate credit, which may include courses used to fulfill other requirements to graduate with a mathematics honors concentration.

The honors category upon graduation is determined as follows: MGPA at least 3.40 – Honors; MGPA at least 3.60 – High Honors; MGPA at least 3.80 – Highest Honors.

SAMPLE PROGRAMS

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

- **First Year**
  - Mathematics 141-142 (or 147-148) and 171
  - English Composition
  - Foreign Language
  - Lab Science Distribution Requirement
  - Hours Credit: 11

- **Second Year**
  - Mathematics 231, 241 (or 247), 251 (or 257), and 300 (or 307)
  - Non-U.S. History Distribution Requirement
  - Social Science Distribution Requirement
  - Foreign Language (completion of secondary level)
  - Science Distribution Requirement
  - Elective
  - Hours Credit: 13

- **Third Year**
  - Mathematics 351, 431 (or 435), 341, 371
  - Humanities Distribution Requirement
  - Social Science Distribution Requirement
  - Electives
  - Hours Credit: 12

- **Fourth Year**
  - Mathematics 471-472, 423, 475
  - Upper-Level Distribution Requirement
  - Oral Communication Requirement
  - Electives
  - Hours Credit: 12

Total 120 minimum

### Preparation for Graduate School

- **First Year**
  - Mathematics 141-142 (or 147-148) and 171
  - English Composition
  - Foreign Language (beginning level, preferably French, German, or Russian)
  - Lab Science Distribution Requirement
  - Hours Credit: 11

- **Second Year**
  - Mathematics 231, 247, 257, and 307 (or 300)
  - Non-U.S. History Distribution Requirement
  - Social Science Distribution Requirement
  - Foreign Language (completion of secondary level)
  - Science Distribution Requirement
  - Elective
  - Hours Credit: 13

- **Third Year**
  - Upper-Division Mathematics Courses
  - Humanities Distribution Requirement
  - Social Science Distribution Requirement
  - Electives
  - Hours Credit: 12

- **Fourth Year**
  - Upper-Division Math Sequence (possibly honors)
  - Honors Upper-Division Math Sequence
  - Upper-Level Distribution Requirement
  - Oral Communication Requirement
  - Electives
  - Hours Credit: 9

Total 120 minimum

### Secondary Education

- **First Year**
  - Mathematics 141-142 (or 147-148) and 171
  - English Composition
  - Foreign Language
  - Lab Science Distribution Requirement
  - Hours Credit: 11

- **Second Year**
  - Mathematics 231, 241 (or 247), 251 (or 257), and 300 (or 307)
  - Non-U.S. History Distribution Requirement
  - Social Science Distribution Requirement
  - Foreign Language (completion of secondary level)
  - Science Distribution Requirement
  - Elective
  - Hours Credit: 13

- **Third Year**
  - Mathematics 323, 351, 341, 371, 400
  - Humanities Distribution Requirement
  - Social Sciences Distribution Requirement
  - Educational Psychology 210
  - Hours Credit: 15

- **Fourth Year**
  - Mathematics 445-446, 460, 421 (or 411, 431)
  - Upper-Level Distribution Requirement
  - Oral Communication Requirement
  - Hours Credit: 12

Total 120 minimum

### 5TH YEAR MASTER OF SCIENCE

Students may earn a Bachelor of Science (majoring in mathematics) and a Master of Science with a major 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 fourth year and no more than 15 hours per semester in the fourth year.
- Do not complete the requirements for an undergraduate degree prior to the end of the fourth year. (For example, postpone one upper-level distribution requirement until the last semester of the fourth 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 approval through the Graduate School (requires a 3.00 cumulative GPA). These courses must be taken in the fourth 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

- **First Year**
  - Mathematics 147-148 and 307 (or 300)
  - English Composition
  - Foreign Language
  - Lab Science Distribution Requirement
  - Hours Credit: 11

- **Second Year**
  - Mathematics 171, 231, 247, 257
  - Non-U.S. History Distribution Requirement
  - Social Science Distribution Requirement
  - Science Distribution Requirement
  - Hours Credit: 12

- **Third Year**
  - Upper-Division Math Sequence (possibly honors)
  - Honors Upper-Division or Graduate Math Sequence
  - Humanities Distribution Requirement
  - Social Science Distribution Requirement
  - Science Distribution Requirement
  - Hours Credit: 6

- **Fourth Year**
  - Upper-Division Honors or Graduate Math Sequences
  - English Composition
  - Educational Psychology
  - Oral Communication Requirement
  - Hours Credit: 12

Total 120 minimum
5TH YEAR MASTER OF SCIENCE IN STATISTICS

Students may earn a Bachelor of Science with a major in mathematics and a Master of Science with a major in statistics in five years following a similar program as above. For more information contact the Department of Statistics, Operations and Management Science.

Minor in Mathematics

Prerequisite to the minor – Mathematics 141-142 (or 147-148). The minor consists of Mathematics 231, 241 (or 247), 251 (257), 300 (307) and 9 additional hours at the 300-400 level (except 309, 399, 405, 490, 497 and 498). Computer Science 370 may be substituted for three of these hours. The grade in each of these courses must be at least C.

DEPARTMENT OF MICROBIOLOGY

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

Jeffrey M. Becker, Head

Professors
Becker, J.M., PhD ........................................ Cincinnati
Moore, R.N., PhD ........................................ Texas
Sayler, G.S., PhD .......................................... Idaho
Small, P.L.C., PhD ........................................ Stanford

Associate Professors
Alexandre, G.M., PhD .................................. Claude Bernard Lyon (France)
Jouline, I.B., PhD ........................................ St. Petersburg (Russia)
Wilhelm, S.W., PhD .................................... Western Ontario (Canada)

Assistant Professors
Buchan, A., PhD ........................................ Georgia
Onami, T.M., PhD ......................................... California (San Diego)
Reynolds, T.B., PhD ..................................... Vanderbilt
Sangster, M.Y., PhD ..................................... Western Australia (Perth)
Sparer, T.E., PhD .......................................... Emory University School of Medicine
Su, C., PhD .................................................. Pennsylvania State
Zinser, E.R., PhD .......................................... Harvard

Research Faculty
Fleming, J., PhD .......................................... Tennessee
Hauser, M., PhD .......................................... California (Irvine)
Layton, A.C., PhD ........................................ Purdue
Lee, B-K, PhD .............................................. Tennessee
Pfiffner, S., PhD .......................................... Florida State
Ripp, S., PhD ............................................... Oklahoma State
Sanseverino, J., PhD .................................... Lehigh

Lecturer
McPherson, E.F., MS .................................. Tennessee

Adjunct Faculty
Biggerstaff, J., PhD ...................................... Brunel (England)
Keller, M., PhD .......................................... Regensburg (Germany)
Schadt, C., PhD .......................................... Colorado
Verberkmoes, N., PhD .................................. Tennessee
White, B., MAT .......................................... Memphis

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/~mfl/  
Erec Koch, Head

Professors
Brizio-Skov, F., PhD .................................... Washington
Campion, E.J., PhD ..................................... Yale
Cree, B., PhD ............................................. California (Davis)
DiMaria, S., PhD ........................................ Wisconsin
Essif, L., PhD ............................................. Brown
Handelsman, M.H. (Distinguished Professor), PhD .... Florida
Hodges, C.R. (Dean of the Graduate School), PhD .... Chicago
Holmland, C., PhD ...................................... Wisconsin
Holub, R. (Provost), PhD ................................ Wisconsin
Koch, E.R., PhD ......................................... Yale
Mellor, C.J., PhD ........................................ Chicago
Pervukhina, N.K., PhD .................................. Bryn Mawr
Rivera-Rodas, O., PhD .................................. California (Davis)
Romeiser, J.B., PhD ..................................... Vanderbilt
Young, D.J., PhD ......................................... Texas

Associate Professors
Ayo, A., PhD .............................................. Arizona
Blackwell, S.H., PhD .................................... Indiana
Cano, L., PhD ........................................ Penn State
Cruz-Cámara, N., PhD .................................. State University of New York (Buffalo)
Kaplan, G., PhD ........................................ Pennsylvania
LaCure, J., PhD .......................................... Indiana
Lee, D.E., PhD .......................................... Stanford
Ohnseorg, S., PhD ....................................... McGill (Canada)
Silva-Filho, E., PhD .................................... North Carolina

Assistant Professors
Arnold, M.N., PhD ..................................... Texas
Bowden, H., PhD ....................................... Georgetown
Dubreil, S., PhD ......................................... Emory
Duke, D., PhD ............................................ Pittsburgh
Gimmel, M., PhD ........................................ Indiana
He, D., PhD ............................................... British Columbia (Canada)
Horiguchi, N., PhD ...................................... Pennsylvania
Kong, K., PhD ........................................... Michigan
Magilow, D.H., PhD .................................... Princeton
Steinle, M., PhD ......................................... Massachusetts

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 may 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 6 credit hours by participating in these programs. In most cases, the courses will fulfill part or all of the foreign lan-
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 in 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 program. 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 the university’s International Student Exchange Programs in China, Germany, Russia, and Japan. The department can also recommend other programs for students interested in foreign study in any of our languages. 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, German 491, and Russian 491. Students should consult the department before registering for these foreign study courses.

**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 complete 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.

**HONORS CONCENTRATION**

The honors concentration consists of at least 33 hours of French courses numbered above 302. Students must have at least 12 hours of honors courses, one of which must be an honors-by-contract course in French. Application may be made after completion of French 351 and 352 or the equivalent. Students must present a cumulative GPA in French classes of not less than 3.50 and an overall GPA of not less than 3.25. A final honors project (French 493), directed by a French faculty member and approved by the French honors committee, must be completed with a grade of B+ or higher during the last 30 hours of coursework. This project will encompass both a written essay or portfolio and an oral presentation to the French faculty. French honors students will also complete a study abroad experience in France or another French-speaking country.

**GERMAN MAJOR**

Majors or minors in German should carefully prepare their programs in consultation with a departmental faculty advisor. German 201, 202 (or equivalent) are prerequisites 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**

The language and literature concentration consists of at least 30 hours of German in courses numbered above 300, including 301-302 and 3 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 four components of the German studies concentration are command of the German language; knowledge of cultural achievements (art, music, philosophy, poetry, fiction, religion, theatre) of German-speaking peoples; knowledge of the political, social, and cultural history of German-speaking nations; and knowledge and understanding of contemporary institutions in German-speaking nations. This concentration consists of 36 hours, distributed as follows.

**Language**

Any four from German 311, 312, 411, 412, 435, 485.

**Literature, Culture, Arts**

Any four from Art History 441; German 301, 302, 305, 323, 350, 363, 415, 416, 419, 420, 431, 432, 433, 434; Musicology 400, 420, 430; Philosophy 324, 326, 353, 370, 395; Religious Studies 385, 411.

**History**

At least one from German 436; History 315, 323, 334, 335, 471, 472, 484.

**Contemporary Institutions**

At least one from Geography 340; German 363.

**Additional Courses**

Two additional courses from the above history and contemporary institutions lists.

**HONORS CONCENTRATION**

The honors concentration consists of at least 32 hours of German in courses numbered above 300. Students must have at least 12 hours of honors courses, including German 477 or 478 with a grade of B+ or better, and a senior honors project (German 497) directed by a faculty member. Students may sign up for honors-by-contract courses in German in order to fulfill the 12 hours of honors courses required for the honors concentration of the German major. The senior honors project (German 497), to be approved by the German honors committee, will encompass both, a written essay or portfolio and an oral presentation to the German faculty, and it must be completed with a grade of B+ or higher during the last 30 hours of coursework. German honors students will also complete a study abroad experience in a German-speaking country. To be admitted to the honors program, students must present a cumulative grade point average in German major courses of at least 3.50 and have an overall GPA of not less than 3.25. Students should apply for admission to the 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 – area studies and literary emphasis. 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 complete 323, 330, and 331. Majors who study a semester or more abroad must take 323 (must be taken prior to any study abroad), 330, and three of the four required 400-level courses at the University of Tennessee. 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.

HISPANIC STUDIES CONCENTRATION
The hispanic studies concentration requires one course from Spanish 332, 333 or 334; six additional courses in language, literature or culture, at least four of which must be from the 400 level.

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

FRENCH, GERMAN, ITALIAN, RUSSIAN, SPANISH MAJOR • LANGUAGE AND WORLD BUSINESS CONCENTRATION
or
INTERDISCIPLINARY PROGRAMS MAJOR • LANGUAGE AND WORLD BUSINESS – CHINESE, JAPANESE, OR PORTUGUESE CONCENTRATION
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.

Due to the extensive and multidisciplinary coursework required by the language and world business concentration/major, students are permitted to use three courses from the concentration/major to fulfill College of Arts and Sciences Basic Skills and Distribution requirements. These courses include Statistics 201 (toward fulfilling the Mathematics and Quantitative Reasoning requirement), Economics 201 (toward fulfilling the Social Science requirement), and one course toward fulfilling the Humanities List A-Literature requirement or the Upper Level Distribution List B-Foreign Studies requirement.

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 entrance and progression to the major are a 2.75 cumulative average in all courses, and a 3.00 average in language courses. Modern Foreign Languages and Literatures 199 is a prerequisite for the program. Program standards are adjusted periodically, and current requirements are available from the Director of the Language and World Business Program.

A. Language Requirements

Chinese concentration (30 hours)
Asian Languages 231, 232, 331, 332; 3 hours of Asian Languages 490 or 491; and 9 hours of courses from the following – Asian Languages 311, 312, 315; History 389, 390, 391, 476; Political Science 454; Religious Studies 376, 379 (or other course approved by the Asian Studies Advisor).

French major (30 hours)
French 333, 345, 351, 352, 400, 422, 432, 440; a 400-level literature elective; and 3 hours of 491, 490, or 493.

German major (30 hours)
German 301, 302, 311, 312, 323 or 363, 485; 3 hours of 490, 491 or 493; and 3 courses numbered 320 or above.

Italian major (27 hours)
Italian 314, 341, 342, 401; 3 hours of 490 or 491; and 12 hours of any 400-level literature courses.

Japanese concentration (30 hours)
Japanese 251, 252, 253, 352, 451, 452; 3 hours of Asian Languages 490 or 491; and 1 of the following – Japanese 313, 314, 321, or 413.

Portuguese concentration (30 hours)
Portuguese 301, 302, 309, 315, 326, 430, 432; and 9 hours of courses from - Portuguese 400, 409, 490, 491, 493; History 360, 361, 460; Spanish 401, 465.

Russian major (30 hours)
Russian 311, 312, 401, 402, 451, 452; 3 hours of 490 or 491; and 9 hours from – 221, 222, 371, 372, 430, or any 400-level courses.

Spanish major (33 hours)
Spanish 323, 330, 331, 345 or 346; at least one 300-level literature survey course; 3 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 (26 hours)
Accounting 200, Economics 201, Business Administration 201, Statistics 201, Finance 301, Marketing 300, Economics 322, 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.) Students should consult their catalogs and advisors to ensure that all prerequisites are met.

International Retail Merchandising (26 hours)
Accounting 200; Business Administration 201; Marketing 300, Retail and Consumer Sciences 210, 310, 421; and 6 additional credit hours from 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 (25 hours)
Accounting 200; Business Administration 201; Agricultural Economics 320, 342, 350, 420, 430; and 3 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 3 hours (included in major requirements).

Additionally, language and world business students must consult an advisor in the department in selecting relevant courses under the basic skills and distribution requirements for the college.

For further information, inquire at 701 McClung Tower.
Minors

Chinese
Asian Languages 231 and 232 or equivalents are prerequisites to the minor. The minor consists of at least 17 hours of Chinese courses, including Asian Languages 331, 332, 431; and 6 hours from Asian Languages 311, 312 or other Chinese courses above 300.

French
Eighteen hours in courses numbered 333 and above, distributed as follows – 333, 351, 352, 421, and 6 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.

German
German 201-202 equivalents are prerequisites to the minor. The minor consists of at least 18 hours of German courses numbered above 300 – normally German 301-302 and 12 additional hours of courses numbered above 300 (excluding 331-332 and courses in English translation).

Italian
Eighteen hours in courses numbered 311 or above. Students pursuing a minor must consult with a departmental advisor.

Japanese
Asian Languages 251 and 252 or equivalents are prerequisites 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.

Portuguese
Eighteen hours in courses numbered 300 or above, distributed as follows – 12 hours chosen from 301, 302, 309, 400, 409, 432, 491; and 6 hours chosen from 315, 316, and 431. Students pursuing a minor must consult with a departmental advisor.

Spanish
The minor consists of eighteen hours in courses numbered above 300, distributed as follows – 323, 330 and 331; one course from 332, 333 or 334; and two additional courses. Minors who study a semester or more abroad must take 323 (must be taken prior to any study abroad), 330, and at least one additional course numbered above 300 at the University of Tennessee.

SCHOOL OF MUSIC
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 ............................................................... Sam Houston
Jacobs, K.A., DMA ...................................................... Texas
Leach, C.F., DM ............................................................ Northwestern
MacMorran, W.S., MM ................................................... Wisconsin
McClelland, D.K., MA .................................................. Columbia
Moore, M.C., PhD ........................................................ Michigan
Northington, D.B., DMA ................................................ Iowa
Pederson, D.M., PhD ..................................................... Ohio State
Sousa, G.D., PhD ........................................................... East Carolina
Stephens, R., MM .......................................................... East Carolina

Associate Professors
Adams, F., MM ............................................................ Tennessee
Baldwin, W., DMA ......................................................... Maryland
Batey, A.L., DMA ........................................................ South Carolina
Binder, S., DM .............................................................. Florida State
Boling, M., MM ............................................................. Tennessee
Brown, D.R. ................................................................. Memphis
Brunelli, D., DM ........................................................... Indiana
Carter, P.Z., MM ............................................................ Colorado

Freeman, C., MPA ............................................................ Oklahoma City
Gay, L.C., PhD .............................................................. Columbia
Murphy, B.A., PhD ....................................................... Ohio State
Royse, D., PhD .............................................................. Kent State
Ryder, D., DMA ............................................................. Iowa
Smith, C., BM .............................................................. State University of New York (Fredonia)
Steinbrenner, R., MM ..................................................... Indiana
Stephens, M.B., MA, MM ................................................ Ohio State
Wentzel, A.N., MM ....................................................... Southern California
Zelmanovich, M., MA ..................................................... Lvo (USSR)

Assistant Professors
Ali-Taei, N., PhD .......................................................... California (Los Angeles)
Class, K., MM .............................................................. Michigan State
Cloutier, D., MM ............................................................ Carnegie Mellon
D’Amore, L., MM ............................................................ New England Conservatory of Music
Fellenbaum, J., MM .......................................................... Northwestern
Friso, C., DMA .............................................................. South Carolina
Golden, R.M., PhD .......................................................... North Carolina
Hawthorne, W.W., PhD .................................................. Cincinnati
Herndon, H., MM ........................................................... Julliard
Skoog, A., MM .............................................................. Stephen F. Austin
Stewart, M., PhD ........................................................... Ohio State

Lecturers
Brown, K., BA .............................................................. Tennessee
Douglass, M., MM .......................................................... Tennessee
Holloway, H., BM .......................................................... Tennessee
McCollough, S., MM ....................................................... Tennessee

Part-time Lecturers
Dunne-Sousa, D., PhD ...................................................... Ohio State
Hart-Reilly, K., BM .......................................................... Tennessee
Ladd, K., PhD .............................................................. Ohio State
Secrist, P., MM .............................................................. Yale
Thompson, D.V., MM ................................................... DePaul
Vincent, L., MM ............................................................. Tennessee
Werner, W., MM ............................................................. Tennessee

The mission of the School of Music is to provide the highest quality instruction in the musical arts and to cultivate creative activity and research in the areas of composition, education, musicology, pedagogy, performance, and theory. As part of its mission, the school enriches the musical and educational lives of its students, the university community and citizens of Tennessee.

Progression Requirements
All new music students (freshman and transfer) must perform an audition in applied music and take a theory examination. In addition, students planning to major in music education or musicology need to interview with a faculty member in the respective area. No student officially progresses to major in music until the audition has been passed, the theory placement examination has been taken, and, if applicable, the interview is complete. The results of the audition and theory exam will determine the student’s placement in applied music and theory. The audition, theory exam, and interview 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 the requirements as early as possible, but certainly no later than the summer orientation period.

Students entering any one of the four 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 required upper-division education courses.

Students who pursue the music education curriculum are subject to all rules and regulations of the Teacher Education Program 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.

General Requirements
Students in the School of Music are required to consult the School of Music Undergraduate Handbook, available in Room
Minimum Performance Standards

Potential performance and music education majors not meeting minimum performance standards, but showing potential will be allowed to register for Music General 101 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).

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 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 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

$150 per semester for half-hour lesson (1 credit hour); $300 and $150 per semester for hour lesson (2-3 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 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 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 (brass; voice; piano; organ; sacred music-organ or piano; sacred music-voice; piano pedagogy; strings; woodwind 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 University General Education Requirement (6 hours foreign language) 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. Options are available to prepare teachers for instrumental teaching or for the teaching of vocal and general music. The option of a student-teaching semester leads to the degree and to teaching licensure. The internship option provides for the granting of the degree with teacher licensure and 24 hours which may be applied to the master’s degree.

Requirements for the Bachelor of Music Degree • Music Major • Music Education Concentration – String Emphasis

<table>
<thead>
<tr>
<th>First Year</th>
<th>Hours</th>
<th>Credit</th>
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</thead>
<tbody>
<tr>
<td>English 101*, 102*</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>Music Performance (100 level) (2,2)</td>
<td></td>
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<tr>
<td>Music General 200 (0,0)</td>
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<td>0</td>
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<tr>
<td>Music Ensemble 370 (1,1)</td>
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<td>2</td>
</tr>
<tr>
<td>Music Theory 110, 120</td>
<td></td>
<td>6</td>
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<tr>
<td>Music Theory 130, 140</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Musicology 110*</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Music Education 240, 241</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Music Keyboard 110, 120</td>
<td></td>
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<thead>
<tr>
<th>Second Year</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Languages</td>
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</tr>
<tr>
<td>1 Cultures and Civilizations*</td>
<td>6</td>
</tr>
<tr>
<td>Child and Family Studies 210*</td>
<td>3</td>
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<tr>
<td>Music Performance (200 level) (2,2)</td>
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<tr>
<td>Music General 200 (0,0)</td>
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<td>Music Ensemble 370 (1,1)</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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<td>Music Education 210 or 211</td>
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<tr>
<td>Music Education 220 or 221</td>
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<tbody>
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<td>Languages</td>
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<td>2 Communication Orally*</td>
<td>3</td>
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<tr>
<td>Mathematics 115*</td>
<td>3</td>
</tr>
<tr>
<td>3 Natural Sciences*</td>
<td>4</td>
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<tr>
<td>Music Performance (200 or 300 level) (2,2)</td>
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<tr>
<td>Music General 200 (0,0)</td>
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<tr>
<td>Music Ensemble 370</td>
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<td>Music Theory 320</td>
<td>2</td>
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<tr>
<td>Music Ensemble</td>
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<tr>
<td>Music Ensemble 315 (1,1)</td>
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<tr>
<td>Musicology 380*</td>
<td>3</td>
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<tr>
<td>Music Education 230</td>
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<td>Music Education 350</td>
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<tr>
<td>Music Education 310, 320</td>
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<tr>
<td>Music Education 200</td>
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<td>Music Education 340</td>
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<tbody>
<tr>
<td>Languages</td>
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</tr>
<tr>
<td>5 Social Sciences*</td>
<td>3</td>
</tr>
<tr>
<td>6 Natural Sciences*</td>
<td>3</td>
</tr>
<tr>
<td>7 Quantitative Reasoning*</td>
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<tr>
<td>Music Performance (300 or 400 level)</td>
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<tr>
<td>Music General 200</td>
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<tr>
<td>Music Ensemble</td>
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</tbody>
</table>

211 Music Building, for departmental policies and procedures pertaining to music degrees.
First Year Hours Credit
Requirements for the Bachelor of Music • Music Major

• Music Education Concentration – Woodwind/Brass/Percussion Emphasis

First Year Hours Credit
English 101*, 102* .................................................6
Music Performance (100 level) (2,2) ..........................4
Music General 200 (0,0) ......................................0
1Music Ensemble (1,1) ........................................2
Music Ensemble 359 ...........................................1
Music Theory 110, 120 .......................................4
Music Theory 130, 140 .......................................6
Musicology 110* ....................................................3
Music Education 230 ...........................................1
Music Education 240 or 241 ....................................1
Music Keyboard 110, 120 ...................................2

Second Year
2Cultures and Civilizations* .......................................6
Child and Family Studies 210* ..................................3
Music Performance (200 level) (2,2) ..........................4
Music General 200 (0,0) ......................................0
1Music Ensemble (1,1) ........................................2
Music Ensemble 359 ...........................................1
Music Theory 210, 220 .......................................6
Music Theory 230, 240 .......................................2
Musicology 210*, 220* ........................................6
Music Education 210, 211 ...................................2
Music Education 220, 221 ...................................2

Third Year
3Communicating Orally* ........................................3
Mathematics 115 ....................................................3
4Natural Sciences* ................................................4
Music Performance (200 or 300 level) (2,2) .................4
Music General 200 (0,0) ......................................0
1Music Ensemble (1,1) ........................................2
Music Ensemble 359 ...........................................1

* Meets University General Education Requirement.
** Teacher licensure requires a fifth-year graduate internship or one semester of student teaching.
1 See Cultures and Civilizations – University General Education Requirement. Select two courses on the list or two courses in a foreign language at the intermediate level.
2 See Communicating Orally – University General Education Requirement. Select one course from the list.
3 See Natural Sciences – University General Education Requirement. Select two courses from the list. At least one of the courses must have a laboratory.
4 Choose from Music Ensemble 370 (Orchestra), 353 (Wind Ensemble), 350 (Concert Band), 352 (Symphonic Band), 380 (Concert Choir), 330 (Chamber Singers), 383 (Men's Chorale), or 389 (Women's Chorale).
5 See Social Sciences – University General Education Requirement.
6 See Quantitative Reasoning list – University General Education Requirement.

Internship Year
Music Education 575 (8,4) ......................................12
Music Education 574 ...........................................2
Music Education 591 ...........................................4
Electives in Music Education or Music .......................6
Total 24 graduate

or

Student Teaching Semester
Music Education 400 ...........................................12
Music Education 401 ...........................................0
Total 12 undergraduate

Requirements for the Bachelor of Music • Music Major

• Music Education Concentration – Vocal-General/Keyboards Emphasis

First Year Hours Credit
English 101*, 102* .................................................6
1Communicating Orally* ........................................3
Music Performance (100 level) (2,2) ..........................4
Music Performance 155, 156 or Music Voice 110 .......4
Music General 200 (0,0) ......................................0
Music Ensemble 330, 380, 383 or 389 .....................2
Music Theory 110, 120 .......................................6
Music Theory 130, 140 .......................................2
Musicology 110* ....................................................3
Music Education 240 or 241 ...................................1

Second Year
2Cultures and Civilizations* .......................................6
Child and Family Studies 210* ..................................3
Music Performance (200 or 300 level) (2,2) .................4
Music General 200 (0,0) ......................................0
1Music Ensemble (1,1) ........................................2
Music Ensemble 359 ...........................................1

* Meets University General Education Requirement.
** Teacher licensure requires a fifth-year graduate internship or one semester of student teaching.
1 Ensemble requirement of 7 credits to be divided as follows:
2 credits of Music Ensemble 353 (Wind Ensemble), 352 (Symphonic Band), or 350 (Concert Band).
2 credits of Music Ensemble 353 (Wind Ensemble), 352 (Symphonic Band), 350 (Concert Band), or 370 (Symphony Orchestra); 380 (Concert Choir), 330 (Chamber Singers), 383 (Men's Chorale), 389 (Women's Chorale).
2 See Cultures and Civilizations list – University General Education Requirement. Select two courses on the list or two courses in a foreign language at the intermediate level.
3 See Communicating Orally list – University General Education Requirement. Select one course from the list.
4 See Natural Sciences list – University General Education Requirement. Select two courses from the list. At least one of the courses must have a laboratory.
5 See Social Sciences list – University General Education Requirement.
6 See Quantitative Reasoning list – University General Education Requirement.

Internship Year
Music Education 575 (8,4) ......................................12
Music Education 574 ...........................................2
Music Education 591 ...........................................4
Electives in Music Education or Music .......................6
Total 24 graduate

or

Student Teaching Semester
Music Education 400 ...........................................12
Music Education 401 ...........................................0
Total 12 undergraduate

Total 122**

Fourth Year
5Quantitative Thinking* .........................................3
6Social Sciences* ................................................3
7Natural Sciences* ...............................................3
Music Theory 320 ................................................2
Musicology 380* ..................................................3
Music Education 350 ..........................................1
Music Education 310, 320 ....................................5
Music Education 340 ..........................................3
Music Education 200 ..........................................1
Music Education 212 ..........................................1
Special Education 402 ...........................................3
Total 125**
Music Performance 155, 156 or 255, 256 (Voice) ................................. 2
Music General 200 (0,0) .................................................. 0
Music Ensemble 330, 380, 383 or 389 ................................... 2
Music Theory 210, 220 ....................................................... 6
Music Theory 230, 240 ....................................................... 2
Musicology 210*, 220* ...................................................... 6
Music Education 200 .......................................................... 1
Music Education 201 .......................................................... 1

** Third Year **
3 Natural Sciences* .......................................................... 4
Mathematics 115* ............................................................. 3
Music Performance (200- or 300-level Keyboard) (2, 2) ......... 4
Music General 200 (0,0) .................................................. 0
Music Ensemble 330, 380, 383 or 389 ................................. 2
Music Ensemble 340 ......................................................... 1
Music Theory 450 ............................................................. 2
Musicology 380* .............................................................. 3
Music Education 210 or 211 ............................................. 1
Music Education 251 ......................................................... 1
Music Education 310, 320 (3,2) ......................................... 5
Music Voice 450 ............................................................... 2
Instructional Technology 486 ............................................. 3

*** Fourth Year ***
4 Social Sciences ............................................................ 3
3 Natural Sciences* .......................................................... 3
5 Quantitative Reasoning* ................................................ 3
Music Performance (300 or 400 level) ................................ 2
Music Ensemble 330, 380, 383 or 389 ................................. 1
Music Education 200 ....................................................... 1
Music Education 330 ....................................................... 3
Music Education 350 ....................................................... 1
Music Education 420 ....................................................... 3
Music Education 430 ....................................................... 3
Music General 301 .......................................................... 0
Educational Psychology 401 .............................................. 3
Special Education 402 ....................................................... 3

Total 124**

* Meets University General Education Requirement.
** Teacher licensure requires a fifth-year graduate internship or one semester of student teaching.
1 See Communicating Orally list – University General Education Requirement. Select one course from the list.
2 See Cultures and Civilizations list – University General Education Requirement. Select two courses on the list or two courses in a foreign language at the intermediate level.
3 See Natural Sciences list – University General Education Requirement. Select two courses from the list. At least one of the courses must have a laboratory.
4 See Social Sciences list – University General Education Requirement.
5 See Quantitative Reasoning list – University General Education Requirement.

Internship Year
Music Education 575 (8,4) ................................................ 12
Music Education 574 ....................................................... 2
Music Education 591 ....................................................... 4
Electives in Music Education or Music ................................. 6

Total 24 graduate

or

Student Teaching Semester
Music Education 400 ...................................................... 12
Music Education 401 ........................................................ 0

Total 12 undergraduate

Requirements for the Bachelor of Music • Music Major
• Music Education Concentration – Vocal-General/Vocal Emphasis

First Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>English 101*, 102*</td>
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</tr>
<tr>
<td>Communicating Orally*</td>
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<tr>
<td>Music Performance (100-level Voice) (2,2)</td>
<td>4</td>
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<tr>
<td>Music Keyboard 110, 120</td>
<td>2</td>
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<tr>
<td>Music General 200 (0,0)</td>
<td>0</td>
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<tr>
<td>Music Ensemble (1,1)</td>
<td>2</td>
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<tr>
<td>Music Theory 110, 120</td>
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</tr>
<tr>
<td>Music Theory 130, 140</td>
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<tr>
<td>Music Education 240 or 241</td>
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Second Year

<table>
<thead>
<tr>
<th>Course</th>
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<th>Credit</th>
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<tbody>
<tr>
<td>Cultures and Civilizations*</td>
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<td>Child and Family Studies 100*</td>
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<td>Music Keyboard 210, 220</td>
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<tr>
<td>Music General 200 (0,0)</td>
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<tr>
<td>Music Ensemble (1,1)</td>
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<tr>
<td>Music Theory 210, 220</td>
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<td>Music Theory 230, 240</td>
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<td>Musicology 210*</td>
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<tr>
<td>Music Education 201</td>
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Third Year

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<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Credit</th>
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<tbody>
<tr>
<td>Natural Sciences*</td>
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<tr>
<td>Mathematics 115*</td>
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<tr>
<td>Music Performance (200- or 300-level Voice) (2,2)</td>
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<td>Music General 200 (0,0)</td>
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<td>Music Ensemble 340</td>
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<td>Music Theory 450</td>
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<td>Musicology 380*</td>
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<td>Music Education 310, 320 (3,2)</td>
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<td>Music Voice 450</td>
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<tr>
<td>Instructional Technology 486</td>
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Fourth Year

<table>
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<th>Course</th>
<th>Hours</th>
<th>Credit</th>
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<tbody>
<tr>
<td>Social Sciences</td>
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<td></td>
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<tr>
<td>Natural Sciences*</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Quantitative Reasoning*</td>
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<td></td>
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<tr>
<td>Music Performance (300 or 400 level Voice)</td>
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</tr>
<tr>
<td>Music General 200</td>
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<td></td>
</tr>
<tr>
<td>Music Ensemble</td>
<td>1</td>
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<tr>
<td>Music Education 200</td>
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<tr>
<td>Music Education 330</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Music Education 350</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Music Education 420</td>
<td>3</td>
<td></td>
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<td>Music Education 430</td>
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<td>Music General 301</td>
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<td>Educational Psychology 401</td>
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<tr>
<td>Special Education 402</td>
<td>3</td>
<td></td>
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</tbody>
</table>

Total 123**

* Meets University General Education Requirement.
** Teacher licensure requires a fifth-year graduate internship or one semester of student teaching.
1 See Communicating Orally list – University General Education Requirement. Select one course from the list.
2 Choose from Music Ensemble 380 (Concert Choir), 330 (Chamber Singers), 383 (Men’s Chorale), 389 (Women’s Chorale).
3 See Cultures and Civilizations list – University General Education Requirement. Select two courses on the list or two courses in a foreign language at the intermediate level.
4 See Natural Sciences list – University General Education Requirement. Select two courses from the list. At least one of the courses must have a laboratory.
5 See Social Sciences list – University General Education Requirement.
6 See Quantitative Reasoning list – University General Education Requirement.

Internship Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Credit</th>
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</thead>
<tbody>
<tr>
<td>Music Education 575 (8,4)</td>
<td>12</td>
<td></td>
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<tr>
<td>Music Education 574</td>
<td>2</td>
<td></td>
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<tr>
<td>Music Education 591</td>
<td>4</td>
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<tr>
<td>Electives in Music Education or Music</td>
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</tr>
</tbody>
</table>

Total 24 graduate

or

Student Teaching Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Credit</th>
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</thead>
<tbody>
<tr>
<td>Music Education 400</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>Music Education 401</td>
<td>0</td>
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</tbody>
</table>

Total 12 undergraduate
### BRASS INSTRUMENTS CONCENTRATION

**Requirements for the Bachelor of Music • Music Major**

**Brass Instruments Concentration**

<table>
<thead>
<tr>
<th>First Year</th>
<th>Hours Credit</th>
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<tbody>
<tr>
<td>English 101*, 102*</td>
<td>.6</td>
</tr>
<tr>
<td>Music Theory 110, 120</td>
<td>.6</td>
</tr>
<tr>
<td>Music Theory 130, 140</td>
<td>.6</td>
</tr>
<tr>
<td>Musicology 110*</td>
<td>.3</td>
</tr>
<tr>
<td>Music Performance (100 level) (3,3)</td>
<td>.6</td>
</tr>
<tr>
<td>†Music Ensemble (1,1)</td>
<td>.2</td>
</tr>
<tr>
<td>Music Keyboard 110,120</td>
<td>.2</td>
</tr>
<tr>
<td>‡Cultures and Civilization</td>
<td>.6</td>
</tr>
<tr>
<td>Music General 200 (0,0)</td>
<td>.0</td>
</tr>
</tbody>
</table>

**Second Year**

| Music Theory 210, 220 | .6 |
| Music Theory 230, 240 | .2 |
| Musicology 210*, 220* | .6 |
| Music Performance (200 level) (3,3) | .6 |
| †Music Ensemble (1,1) | .2 |
| Music Keyboard 210,220 | .2 |
| ‡Social Sciences* | .6 |
| Music General 200 (0,0) | .0 |

**Third Year**

| Music Theory 310 | .3 |
| Music Theory 320 | .2 |
| Music Performance (300 level) (3,3) | .6 |
| †Music Ensemble (1, 1) | .2 |
| Musicology 300* | .3 |
| Music Instrumental 310, 320 or 330 | .3 |
| Music General 200 (0,0) | .0 |
| Music General 301 | .0 |
| Electives | .3 |
| ‡Natural Sciences* | .7 |

**Fourth Year**

| Music Education 310 | .3 |
| Music Electives | .4 |
| Music Performance (400 level) (3,3) | .6 |
| †Music Ensemble (1, 1) | .2 |
| Music General 200 (0,0) | .0 |
| Music General 401 | .0 |
| ‡Quantitative Reasoning* | .6 |
| ‡Communicating Orally* | .3 |
| Electives | .4 |

**Total 120**

* Meets University General Education Requirement.
1 6 credits of Music Ensemble 353 (Wind Ensemble), 350 (Concert Band), 352 (Symphonic Band), 370 (Symphony Orchestra; 2 credits of 353 (Wind Ensemble), 350 (Concert Band), 352 (Symphonic Band), 370 (Symphony Orchestra), 383 (Men’s Chorale), 389 (Women’s Chorale), 380 (Concert Choir), 330 (Chamber Singers), 303 (Small Jazz Ensemble), 305 (Studio Orchestra), 304 (Jazz Ensemble), 306 (Trombone Choir).
2 See Cultures and Civilizations list – University General Education Requirement. Select two courses on the list or two courses in a foreign language at the intermediate level.
3 See Social Sciences list – University General Education Requirement. Select two courses from the list.
4 See Quantitative Reasoning list – University General Education Requirement. Select two courses from the list. At least one of the courses must have a laboratory.
5 See Communicating Orally list – University General Education Requirement. Select two courses from the list.
6 See Natural Sciences list – University General Education Requirement. Select one course from the list.

### ORGAN CONCENTRATION

**Requirements for the Bachelor of Music • Music Major**

**Organ Concentration**

<table>
<thead>
<tr>
<th>First Year</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>English 101*, 102*</td>
<td>.6</td>
</tr>
<tr>
<td>Music Theory 110, 120</td>
<td>.6</td>
</tr>
<tr>
<td>Music Theory 130, 140</td>
<td>.2</td>
</tr>
<tr>
<td>Musicology 110*</td>
<td>.3</td>
</tr>
<tr>
<td>Music Performance 160 (3,3)</td>
<td>.2</td>
</tr>
<tr>
<td>†Music Ensemble (1,1)</td>
<td>.2</td>
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<tr>
<td>Music General 200 (0,0)</td>
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<tr>
<td>Foreign Language (200-level sequence)*</td>
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</table>

### PIANO CONCENTRATION

**Requirements for the Bachelor of Music • Music Major**

**Piano Concentration**

<table>
<thead>
<tr>
<th>First Year</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>English 101*, 102*</td>
<td>.6</td>
</tr>
<tr>
<td>Music Theory 110, 120</td>
<td>.6</td>
</tr>
<tr>
<td>Music Theory 130, 140</td>
<td>.2</td>
</tr>
<tr>
<td>Musicology 110*</td>
<td>.3</td>
</tr>
<tr>
<td>Music Performance 180 (3,3)</td>
<td>.6</td>
</tr>
<tr>
<td>†Music Ensemble (1,1)</td>
<td>.2</td>
</tr>
<tr>
<td>Music General 200 (0,0)</td>
<td>.0</td>
</tr>
<tr>
<td>‡Cultures and Civilization*</td>
<td>.6</td>
</tr>
</tbody>
</table>

**Second Year**

| Music Theory 210, 220 | .6 |
| Music Theory 230, 240 | .2 |
| Musicology 210*, 220* | .6 |
| Music Performance 260 (3,3) | .6 |
| †Music Ensemble (1,1) | .2 |
| Music General 200 (0,0) | .0 |
| ‡Natural Sciences* | .7 |
| ‡Communicating Orally* | .3 |

**Third Year**

| Musicology 380* | .3 |
| Music Keyboard 420, 430 | .6 |
| Music Education 310 | .2 |
| ‡Social Sciences* | .6 |
| Music Theory 310 | .3 |
| Music Performance 380 (3,3) | .6 |
Music Ensemble 399 (1,1) ................................. 2
Music General 200 (0,0) ................................. 0
Music General 301 ......................................... 0

Fourth Year
Music Keyboard 230 ........................................ 1
Music Keyboard 340 ........................................ 3
Music Performance 480 (3,3) ............................ 6
Music Ensemble 399 (1,1) ................................. 2
Quantitative Reasoning* .................................... 6
Music General 200 (0,0) .................................... 0
Music General 401 .......................................... 0
Electives .................................................... 10

Total 120

* Meets University General Education Requirement.
1 Choose from Music Ensemble 380 (Concert Choir), 330 (Chamber Singers), 383 (Men’s Chorale), 389 (Women’s Chorale), 353 (Wind Ensemble), 352 (Symphonic Band), 350 (Concert Band), 370 (Symphony Orchestra).
2 Choose from Music Ensemble 380 (Concert Choir), 330 (Chamber Singers), 383 (Men’s Chorale), 389 (Women’s Chorale), 353 (Wind Ensemble), 352 (Symphonic Band), 350 (Concert Band), 370 (Symphony Orchestra).
3 See Natural Sciences list – University General Education Requirement. Select two courses from the list. At least one of the courses must have a laboratory.

PIANO PEDAGOGY CONCENTRATION
Requirements for the Bachelor of Music • Music Major
• Piano Pedagogy Concentration

First Year
Music Ensemble 399 (1,1) ................................. 2
Music General 200 (0,0) ................................. 0
Music General 301 ......................................... 0

Total 120

* Meets University General Education Requirement.
1 See Cultures and Civilizations list – 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.
2 See Quantitative Reasoning list – University General Education Requirement. Select one course from the list.
3 See Social Sciences list – University General Education Requirement. Select two courses from the list. At least one of the courses must have a laboratory.
4 See Communicating Orally list – University General Education Requirement. Select one course from the list.
5 See Quantitative Reasoning list – University General Education Requirement. Select two courses from the list.
6 See Social Sciences list – University General Education Requirement. Select one course from the list.

SACRED MUSIC CONCENTRATION
Requirements for the Bachelor of Music • Music Major
• Sacred Music Concentration • Organ Track

First Year

<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>Music Theory 110</td>
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<td>Music Theory 130</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Musicology 110*</td>
<td></td>
<td>3</td>
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<tr>
<td>Music Performance 180 (2,2)</td>
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<td>Music General 200 (0,0)</td>
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<td>1Cultures and Civilization*</td>
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<td>2Music Ensemble (1,1)</td>
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<td>Music Ensemble 399 (1,1)</td>
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<td>Music Keyboard 340, 350</td>
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<tr>
<td>Music Voice 110 or Music Performance 155 (1,1)</td>
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Second Year

<table>
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<th>Course</th>
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<td>Music Theory 230, 240</td>
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<tr>
<td>Musicology 210*, 220*</td>
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<td>Music Performance 280 (2,2)</td>
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<td>3Natural Sciences*</td>
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<td>Music Keyboard 340, 350</td>
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<td>Psychology 110*</td>
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<td>Music Theory 310</td>
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<td>Musicology 380*</td>
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<td>Music Performance 390 (Organ, Choir)</td>
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<td>Music Performance 390 (Organ, Symphony)</td>
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<td>Music Performance 380 (2,2)</td>
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<td>Music Ensemble 399 (1,1)</td>
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<tr>
<td>Music General 200 (0,0)</td>
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<td>Music General 301</td>
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<tr>
<td>Music Keyboard 360, 370</td>
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<td>Music Education 310</td>
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<td>Music Education 200</td>
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<td>0</td>
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<tr>
<td>Music Performance 155 (Voice)</td>
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<td>Music General 200 (0,0)</td>
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<td>Music General 401</td>
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<tr>
<td>Music Voice 110 or Music Performance 155 (1,1)</td>
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Total 120

* Meets University General Education Requirement.
1 See Cultures and Civilizations list – 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.
2 See Quantitative Reasoning list – University General Education Requirement. Select two courses from the list.
3 See Social Sciences list – University General Education Requirement. Select two courses from the list.
4 See Communicating Orally list – University General Education Requirement. Select one course from the list.

Fourth Year

<table>
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<tr>
<th>Course</th>
<th>Hours</th>
<th>Credit</th>
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<tbody>
<tr>
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<td>Music Performance 490 (2,2)</td>
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<td>Music Theory 410</td>
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<tr>
<td>Music Keyboard 460, 470</td>
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<td>Music Ensemble 410 (1,1)</td>
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<td>Music General 200 (0,0)</td>
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<td>Music General 401</td>
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<tr>
<td>4Religious Studies</td>
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<td>3</td>
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<tr>
<td>5Communicating Orally*</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Electives</td>
<td></td>
<td>2</td>
</tr>
</tbody>
</table>

Total 120

* Meets University General Education Requirement.
1 4-8 credits of Music Ensemble 380 (Concert Choir), 330 (Chamber Singers), 383 (Men’s Chorale) or 389 (Women’s Chorale); 1-4 credits of 389 (accompanying).
2 See Quantitative Reasoning list – University General Education Requirement. Select two courses from the list.
Requirements for the Bachelor of Music • Music Major
• Sacred Music Concentration • Piano Track

First Year
1 Music Ensemble (1,1) .................................................. 2
Music Theory 110, 120 .................................................. 6
Music Theory 130, 140 .................................................. 2
Musicology 110* .................................................. 3
Music Performance 189, 190 (Organ) .................. 2
1 Music Ensemble (1,1) .................................................. 2
Music Performance 180, 181 (Piano) .................. 4
Foreign Language (200-level sequence)* ........... 6
Music General 200 (0,0) .................................................. 0

Second Year
2 Quantitative Reasoning* .................................................. 6
Music Theory 210, 220 .................................................. 6
Music Theory 230, 240 .................................................. 2
Musicology 101*, 220* .................................................. 6
1 Music Ensemble (1,1) .................................................. 2
Music Performance 280, 281 (Piano) .................. 4
Music Performance 289, 290 (Organ) .................. 2
Music Keyboard 230 .................................................. 1
Music Keyboard 410 .................................................. 1
Music Education 200 .................................................. 1
Music General 200 (0,0) .................................................. 0

Third Year
3 Social Sciences* .................................................. 6
Musicology 380* .................................................. 3
Music Theory 310 .................................................. 3
Musicology 480 .................................................. 3
Music Performance 380, 381 (Piano) .................. 4
Music Performance 480 .................................................. 3
Music General 200 (0,0) .................................................. 0
Music General 301 .................................................. 0
Music Education 310, 320 .................................................. 5
Music Performance 155, 156 or Music Voice 110, 120 .... 2
4 Religious Studies .................................................. 3

Fourth Year
5 Natural Sciences* .................................................. 7
6 Communicating Orally* .................................................. 3
Music Keyboard 410 .................................................. 2
Music Keyboard 420 or 430 .................................................. 3
Music General 495 .................................................. 3
Music Performance 155, 156 or 255, 256 (Voice) .... 2
Music Performance 480, 481 (Piano) .................. 4
1 Music Ensemble (1,1) .................................................. 2
Music General 200 (0,0) .................................................. 0
Music General 401 .................................................. 0
Electives .................................................. 1

Total 120

* Meets University General Education Requirement.
1 Piano majors take 4 hours of Music Ensemble 399 (accompanying) and 4 hours of Music Ensemble 330 (Chamber Singers), 380 (Concert Choir), 383 (Men's Chorale), or 389 (Women's Chorale).
2 See Quantitative Reasoning list – University General Education Requirement. Select two courses from the list.
3 See Social Sciences list – University General Education Requirement. Select two courses from the list.
5 See Natural Sciences list – University General Education Requirement. Select two courses from the list. At least one of the courses must have a laboratory.
6 See Communicating Orally list – University General Education Requirement.

Requirements for the Bachelor of Music • Music Major
• Sacred Music Concentration • Voice Track

First Year
English 101*, 102* .................................................. 6
Music Theory 110, 120 .................................................. 6
Music Theory 130, 140 .................................................. 2
Musicology 110* .................................................. 3
Music Performance 155 (Voice) (2,2) .............. 4
1 Music Ensemble (1,1) .................................................. 2
2 Music Performance (1,1) .................................................. 2
Foreign Language (200-level sequence)* .......... 6
Music General 200 (0,0) .................................................. 0

Second Year
3 Natural Sciences* .................................................. 7
Music Education 200 .................................................. 1
Music Theory 210, 220 .................................................. 6
Music Performance 230, 240 .................................................. 4
Musicology 210*, 220* .................................................. 6
2 Music Performance (1,1) .................................................. 2
1 Music Ensemble (1,1) .................................................. 2
Music Performance 255 (2,2) .................................................. 4
Music Voice 425 .................................................. 3
Music General 200 (0,0) .................................................. 0

Third Year
4 Social Sciences* .................................................. 6
Musicology 380* .................................................. 3
Music Theory 310 .................................................. 3
Musicology 480 .................................................. 3
Music Performance 355 (2,2) .................................................. 4
1 Music Ensemble (1,1) .................................................. 2
Music General 200 (0,0) .................................................. 0
Music General 301 .................................................. 0
Music Education 310, 320 .................................................. 5
5 Communicating Orally* .................................................. 3

Fourth Year
6 Quantitative Reasoning* .................................................. 6
Music Performance 455 (2,2) .................................................. 4
1 Music Ensemble (1,1) .................................................. 2
Music Performance 420, 430 .................................................. 6
Music Voice 430 .................................................. 3
Music Voice 450, 460 .................................................. 3
Music General 401 .................................................. 0
4 Religious Studies .................................................. 3
Electives .................................................. 2

Total 120

* Meets University General Education Requirement.
1 6-8 credits of Music Ensemble 380 (Concert Choir), 330 (Chamber Singers), 383 (Men's Chorale) or 389 (Women's Chorale); 1-2 credits of Music Ensemble 340 (Opera Theatre).
2 Class Piano (Music Keyboard 110-120, 210-220) or Organ (Music Performance 190).
3 See Natural Sciences list – University General Education Requirement. Select two courses from the list. At least one of the courses must have a laboratory.
4 See Social Sciences list – University General Education Requirement. Select two courses from the list.
5 See Communicating Orally list – University General Education Requirement.
6 See Quantitative Reasoning list – University General Education Requirement. Select one course from the list.

STRINGS CONCENTRATION
Requirements for the Bachelor of Music • Music Major
• Strings Concentration

First Year
English 101*, 102* .................................................. 6
Music Theory 110, 120 .................................................. 6
Music Theory 130, 140 .................................................. 2
Musicology 110* .................................................. 3
Music Performance (100 level) (3,3) .............. 6
Music Keyboard 110, 120 .................................................. 2
Music Ensemble 370 (1,1) .................................................. 2
Music General 200 (0,0) .................................................. 0
Natural Sciences* .................................................. 4
Second Year
Music Theory 210, 220 ............................................. 6
Music Theory 230, 240 ............................................. 2
Musicology 210*, 220* ............................................. 6
Music Keyboard 210, 220 ........................................ 2
Music Performance (200 level) (3,3) ............................ 6
Music Ensemble 370 (1,1) ........................................ 2
Music General 200 (0,0) ........................................... 2
2Cultures and Civilizations* ..................................... 6

Third Year
Music Theory 310 .................................................. 3
Music Theory 420 .................................................. 3
Musicology 380* .................................................. 3
Music Performance (300 level) (3,3) ............................ 6
Music Ensemble 370 (1,1) ........................................ 2
Music Education 310 ............................................. 3
3Social Sciences* .................................................. 6
4Communicating Orally* ......................................... 3
Music General 200 (0,0) ........................................... 0
Music General 301 ................................................. 0

Fourth Year
Music Performance (400 level) (3,3) ............................ 6
Music Instrumental 340, 350 .................................... 6
Musicology 380* .................................................. 3
Music General 200 (0,0) ........................................... 0
Music General 401 ................................................. 0
1Natural Sciences* ................................................ 3
Electives ................................................................... 7

Total 120

* Meets University General Education Requirement.
1 See Natural Sciences list – University General Education Requirement. Choose two courses from the list. At least one of the courses must have a laboratory.
2 See Cultures and Civilizations list – University General Education Requirement. Select two courses from the list. At least one of the courses must have a laboratory.
3 See Social Sciences list – University General Education Requirement. Select one course from the list.
4 See Communicating Orally list – University General Education Requirement. Select one course from the list.
5 See Quantitative Reasoning list – University General Education Requirement. Select two courses from the list.

STUDIO MUSIC AND JAZZ CONCENTRATION
Requirements for the Bachelor of Music • Music Major
• Studio Music and Jazz Concentration

First Year
English 101*, 102* .................................................. 6
Music Theory 110, 120 ............................................. 6
Music Theory 130, 140 ............................................. 2
Musicology 110* .................................................. 3
Musicology 350 .................................................. 3
Music Jazz 110 .................................................. 4
Music Jazz 130, 140 ............................................. 2
Music Performance (100 level) (2,2) ............................ 4
1Music Ensemble (1,1) ........................................... 2
Music General 200 (0,0) ........................................... 0

Second Year
Music Theory 210, 220 ............................................. 6
Music Theory 230, 240 ............................................. 2
Musicology 210*, 220* ............................................. 6
Music Jazz 120 .................................................. 2
Music Jazz 210, 220 ............................................. 4
Music Performance (200 level) (2,2) ............................ 4
1Music Ensemble (1,1) ........................................... 2
Music General 200 (0,0) ........................................... 0
Music Technology 340 ........................................... 3
2Social Sciences* ................................................ 3

Third Year
Music Theory 310 .................................................. 3
Music Jazz 310 .................................................. 2
Music Jazz 320 .................................................. 2
Musicology 380* .................................................. 3
Music Performance (300 level) (2,2) ............................ 2
1Music Ensemble (1,1) ........................................... 2
Music General 200 (0,0) ........................................... 0
Music Performance (400 level) (2,2) ............................ 4
1Music Ensemble (1,1) ........................................... 2
Music General 200 (0,0) ........................................... 0
Music General 401 ................................................. 0
4Communicating Orally* ......................................... 3
Electives ................................................................... 7

Total 120

THEORY/COMPOSITION CONCENTRATION
Requirements for the Bachelor of Music • Music Major
• Theory/Composition Concentration

First Year
English 101*, 102* .................................................. 6
Music Theory 110, 120 ............................................. 6
Music Theory 130, 140 ............................................. 2
Musicology 110* .................................................. 3
Music Technology 340 ........................................... 2
Music General 200 (0,0) ........................................... 0
Music Jazz 210, 220 ............................................. 2
Music Performance (200 level) (2,2) ............................ 4
1Music Ensemble (1,1) ........................................... 2
Music General 200 (0,0) ........................................... 0
Music Technology 340 ........................................... 3
2Social Sciences* ................................................ 3

Second Year
Music Theory 210*, 220* ........................................ 6
Music Theory 230, 240 ............................................. 2
Music Performance 294 (1,1) .................................... 2
Music Technology 340 ........................................... 2
Musicology 210*, 220* ............................................. 6
1Music Ensemble (1,1) ........................................... 2
Music General 200 (0,0) ........................................... 0
Music Keyboard 210, 220 ........................................ 2
3Cultures and Civilizations* ..................................... 6

Third Year
Music Theory 310 .................................................. 3
Music Theory 420 .................................................. 3
Musicology 380* .................................................. 3
Music Performance (1,1) ........................................ 2
4Area Study .................................................. 4
1Music Ensemble (1,1) ........................................... 2
Music General 200 (0,0) ........................................... 0
Electives ................................................................... 6
5Natural Sciences* ................................................ 7
Communication Studies 210* .................................... 3

Fourth Year
Music Theory 430, 440 ............................................. 6
Music Performance (1,1) ........................................ 2
4Area Study .................................................. 4
1Music Ensemble .................................................. 2
Music Education 310 ............................................. 3
Music General 200 (0,0) ........................................... 0
6Social Sciences* ................................................ 6
Electives ................................................................... 6

Total 120
* Meets University General Education Requirement.

1 6-8 credits of Music Ensemble 353 (Wind Ensemble), 350 (Concert Band), 352 (Symphonic Band), 370 (Symphony Orchestra), 383 (Men’s Chorale), 389 (Women’s Chorale), 380 (Concert Choir), 330 (Chamber Singers), 303 (Small Jazz Ensemble), 305 (Studio Orchestra), 304 (Jazz Ensemble), 306 (Trombone Choir). One credit of Music Ensemble 395 (accompanying) and 1 credit of Music Ensemble 340 (Opera Theater) may be used for ensemble requirement.

2 See Quantitative Reasoning list – University General Education Requirement.

3 See Cultures and Civilizations list – University General Education Requirement. Select two courses on the list or two courses in a foreign language at the intermediate level.

4 Areas of Study

5 See Natural Sciences list – University General Education Requirement. Select two courses on the list. At least one of the courses must have a laboratory.

6 See Quantitative Reasoning list – University General Education Requirement. Select two courses from the list.

**VOICE CONCENTRATION**

* Requirements for the Bachelor of Music • Music Major

**Voice Concentration**

<table>
<thead>
<tr>
<th>First Year</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>English 101*, 102*</td>
<td>6</td>
</tr>
<tr>
<td>Music Theory 110, 120</td>
<td>6</td>
</tr>
<tr>
<td>Music Theory 130, 140</td>
<td>2</td>
</tr>
<tr>
<td>Musicology 110*</td>
<td>3</td>
</tr>
<tr>
<td>Music Performance 155 (3,3)</td>
<td>6</td>
</tr>
<tr>
<td>Music Ensemble (1,1)</td>
<td>2</td>
</tr>
<tr>
<td>Music General 200 (0,0)</td>
<td>0</td>
</tr>
<tr>
<td>Music Keyboard 110, 120</td>
<td>2</td>
</tr>
<tr>
<td>2 Foreign Language</td>
<td>6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Year</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Music Theory 210, 220</td>
<td>6</td>
</tr>
<tr>
<td>Music Theory 230, 240</td>
<td>2</td>
</tr>
<tr>
<td>Musicology 210*, 220*</td>
<td>2</td>
</tr>
<tr>
<td>Music Performance 255 (3,3)</td>
<td>6</td>
</tr>
<tr>
<td>Music Ensemble (1,1)</td>
<td>2</td>
</tr>
<tr>
<td>Music Keyboard 210, 220</td>
<td>2</td>
</tr>
<tr>
<td>Music General 200 (0,0)</td>
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<tr>
<td>Music Voice 240, 250</td>
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</table>

<table>
<thead>
<tr>
<th>Third Year</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Musicology 380*</td>
<td>3</td>
</tr>
<tr>
<td>2 Foreign Language</td>
<td>3</td>
</tr>
<tr>
<td>Social Sciences*</td>
<td>2</td>
</tr>
<tr>
<td>Music Theory 310</td>
<td>3</td>
</tr>
<tr>
<td>Music Performance 355 (3,3)</td>
<td>6</td>
</tr>
<tr>
<td>Music Ensemble (1,1)</td>
<td>2</td>
</tr>
<tr>
<td>Music Ensemble 340 (1,1)</td>
<td>2</td>
</tr>
<tr>
<td>Music General 200 (0,0)</td>
<td>0</td>
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<tr>
<td>Music General 301</td>
<td>0</td>
</tr>
<tr>
<td>4 Natural Sciences*</td>
<td>7</td>
</tr>
<tr>
<td>Music Education 310</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fourth Year</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Music Voice 410, 420</td>
<td>4</td>
</tr>
<tr>
<td>Music Voice 450, 460</td>
<td>3</td>
</tr>
<tr>
<td>Music Performance 455 (3,3)</td>
<td>4</td>
</tr>
<tr>
<td>Music Ensemble 340 (1,1)</td>
<td>2</td>
</tr>
<tr>
<td>Music General 200 (0,0)</td>
<td>0</td>
</tr>
<tr>
<td>Music General 401</td>
<td>0</td>
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<tr>
<td>Social Sciences*</td>
<td>3</td>
</tr>
<tr>
<td>Communicating Orally*</td>
<td>3</td>
</tr>
<tr>
<td>Quantitative Reasoning</td>
<td>3</td>
</tr>
</tbody>
</table>

Total 123

* Meets University General Education Requirement.

1 Choose from Music Ensemble 380 (Concert Choir), 330 (Chamber Singers), 383 (Men’s Chorale) or 389 (Women’s Chorale).

2 Consult voice concentration advisor for the appropriate language concentrations.

3 See Social Sciences list – University General Education Requirement.

4 See Natural Sciences list – University General Education Requirement. Select two courses from the list. At least one of the courses must have a laboratory.

5 See Communicating Orally list – University General Education Requirement. Select two courses from the list.

**WOODWIND AND PERCUSSION INSTRUMENTS CONCENTRATION**

* Requirements for the Bachelor of Music • Music Major

• Woodwind and Percussion Instruments Concentration

**First Year**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>English 101*, 102*</td>
<td>6</td>
</tr>
<tr>
<td>Music Theory 110, 120</td>
<td>6</td>
</tr>
<tr>
<td>Music Theory 130, 140</td>
<td>2</td>
</tr>
<tr>
<td>Musicology 110*</td>
<td>3</td>
</tr>
<tr>
<td>Music Theory 110, 120</td>
<td>6</td>
</tr>
<tr>
<td>1 Music Ensemble (1,1)</td>
<td>2</td>
</tr>
<tr>
<td>Music Keyboard 110, 120</td>
<td>2</td>
</tr>
<tr>
<td>2 Cultures and Civilization*</td>
<td>6</td>
</tr>
<tr>
<td>Music General 200 (0,0)</td>
<td>0</td>
</tr>
</tbody>
</table>

**Second Year**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Music Theory 210, 220</td>
<td>6</td>
</tr>
<tr>
<td>Music Theory 230, 240</td>
<td>2</td>
</tr>
<tr>
<td>Musicology 210*, 220*</td>
<td>2</td>
</tr>
<tr>
<td>Music Performance 255 (3,3)</td>
<td>6</td>
</tr>
<tr>
<td>1 Music Ensemble (1,1)</td>
<td>2</td>
</tr>
<tr>
<td>Music General 200 (0,0)</td>
<td>0</td>
</tr>
<tr>
<td>Music General 301</td>
<td>0</td>
</tr>
<tr>
<td>Electives</td>
<td>3</td>
</tr>
<tr>
<td>4 Natural Sciences*</td>
<td>7</td>
</tr>
</tbody>
</table>

**Third Year**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Music Theory 310</td>
<td>3</td>
</tr>
<tr>
<td>Music Theory 320</td>
<td>2</td>
</tr>
<tr>
<td>Music Performance (300 level) (3,3)</td>
<td>6</td>
</tr>
<tr>
<td>1 Music Ensemble (1,1)</td>
<td>2</td>
</tr>
<tr>
<td>Musicology 380*</td>
<td>3</td>
</tr>
<tr>
<td>Music Instrumental 310, 320 or 390</td>
<td>3</td>
</tr>
<tr>
<td>Music General 200 (0,0)</td>
<td>0</td>
</tr>
<tr>
<td>Music General 301</td>
<td>0</td>
</tr>
<tr>
<td>Electives</td>
<td>3</td>
</tr>
</tbody>
</table>

**Fourth Year**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Music Education 310</td>
<td>3</td>
</tr>
<tr>
<td>Music Electives</td>
<td>4</td>
</tr>
<tr>
<td>Music Performance (400 level) (3,3)</td>
<td>6</td>
</tr>
<tr>
<td>1 Music Ensemble (1,1)</td>
<td>2</td>
</tr>
<tr>
<td>Music General 200 (0,0)</td>
<td>0</td>
</tr>
<tr>
<td>Music General 401</td>
<td>0</td>
</tr>
<tr>
<td>5 Quantitative Reasoning*</td>
<td>6</td>
</tr>
<tr>
<td>6 Communicating Orally*</td>
<td>3</td>
</tr>
<tr>
<td>Electives</td>
<td>4</td>
</tr>
</tbody>
</table>

Total 120

* Meets University General Education Requirement.

1 Choose from Music Ensemble 353 (Wind Ensemble), 352 (Symphonic Band), 350 (Concert Band), 370 (Symphony Orchestra), 304 (Jazz Ensemble), 305 (Studio Orchestra).

2 See Cultures and Civilizations list – University General Education Requirement. Select two courses on the list or two courses in a foreign language at the intermediate level.

3 See Social Sciences list – University General Education Requirement. Select two courses from the list.

4 See Natural Sciences list – University General Education Requirement. Select two courses from the list. At least one of the courses must have a laboratory.

5 See Quantitative Reasoning list – University General Education Requirement. Select two courses from the list.

6 See Communicating Orally list – University General Education Requirement. Select one course 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 for the Bachelor of Arts • Music Major

<table>
<thead>
<tr>
<th>Prerequisites</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Music Theory 110, 120</td>
<td>8</td>
</tr>
<tr>
<td>Music Theory 130, 140</td>
<td>9</td>
</tr>
<tr>
<td>Music Performance (100 level) (1,1)</td>
<td>2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Courses toward the major</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Music Theory 210, 220</td>
<td>6</td>
</tr>
<tr>
<td>Music Theory 230, 240</td>
<td>2</td>
</tr>
<tr>
<td>Musicology 110*</td>
<td>3</td>
</tr>
<tr>
<td>Musicology 210*, 220*</td>
<td>6</td>
</tr>
<tr>
<td>Music General 200</td>
<td>6</td>
</tr>
<tr>
<td>Music Performance (200 level or above)</td>
<td>8</td>
</tr>
<tr>
<td>Music Performance 100-level</td>
<td>8</td>
</tr>
<tr>
<td>Music Performance 200-level or above</td>
<td>8</td>
</tr>
<tr>
<td>Music Electives</td>
<td>0-3</td>
</tr>
</tbody>
</table>

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.

1. Students must complete a minimum of four semesters of Music Performance at the 200 level or above.
2. Music General 200 must be completed a minimum of four semesters.


4. Select from Music General 301(0), 411(0); Music Theory 493 (3); Musicology 460 (3), 493 (3).

MUSIC AND CULTURE CONCENTRATION

Requirements for the Bachelor of Arts • Music Major • Music and Culture Concentration

<table>
<thead>
<tr>
<th>Prerequisites</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Music Theory 110, 120</td>
<td>8</td>
</tr>
<tr>
<td>Music Theory 130, 140</td>
<td>9</td>
</tr>
<tr>
<td>Musicology Course (100 level)</td>
<td>3</td>
</tr>
<tr>
<td>1Intro Culture Course (100 level)</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Courses toward the major</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Music Theory 210</td>
<td>3</td>
</tr>
<tr>
<td>Music Theory 230</td>
<td>1</td>
</tr>
<tr>
<td>Music Jazz 110 or Music Theory 220</td>
<td>2-3</td>
</tr>
<tr>
<td>Music Performance (100 level) (1,1)</td>
<td>2</td>
</tr>
<tr>
<td>Music General 200 (0,0)</td>
<td>0</td>
</tr>
<tr>
<td>Music Ensemble</td>
<td>2</td>
</tr>
<tr>
<td>Performance Experience</td>
<td>2</td>
</tr>
<tr>
<td>Musicology 210, 220</td>
<td>6</td>
</tr>
<tr>
<td>Musicology 290</td>
<td>3</td>
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<tr>
<td>Musicology 380</td>
<td>3</td>
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<tr>
<td>Musicology Elective (300 level or above)</td>
<td>6</td>
</tr>
<tr>
<td>Interdisciplinary Elective</td>
<td>3</td>
</tr>
</tbody>
</table>

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.

1. To be chosen from Anthropology 130, Sociology 120, Asian Studies 101 or 102, Religious Studies 101 or 102, or by approval of musicology faculty.
3. To be chosen from Music Performance 100 level or above; Music Education 260 or 310; Music Jazz 130, 160 or 210; Music Keyboard 110, 115, 120; or Music Voice 110; Dance 210, 220, 230, or 240.
4. To be chosen from Musicology 310, 330, 350, 410, 420, 430, 450, 460, or 493.
5. To be chosen from Africana Studies 201, 202, 235 or 236; 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

Applied Music

The minor concentration in applied music consists of 15 hours in courses numbered 200 and above.

<table>
<thead>
<tr>
<th>Prerequisites</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Music Theory 100 or 105</td>
<td>3</td>
</tr>
<tr>
<td>Musicology 110*</td>
<td>3</td>
</tr>
<tr>
<td>Music Performance 100-level</td>
<td>2</td>
</tr>
</tbody>
</table>

Required Courses

| Music Performance 200-level or above | 8 |
| Music Electives | 7 |

Musicology

The minor concentration in musicology consists of 17 hours in courses numbered 200 and above.

<table>
<thead>
<tr>
<th>Prerequisites</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Musicology 100-level course</td>
<td>3</td>
</tr>
<tr>
<td>Music Theory 100 or 105</td>
<td>3</td>
</tr>
<tr>
<td>Music Performance 100-level</td>
<td>2</td>
</tr>
</tbody>
</table>

Required Courses

| Musicology 290 | 3 |
| Musicology courses | 6 |
| Music Electives | 5 |

DEPARTMENT OF PHILOSOPHY

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

John R. Hardwig, Head

Professors

Aquila, R.E., PhD . . . . . . Northwestern
Graber, G.C., PhD . . . . . . Michigan
Hardwig, J.R., PhD . . . . . . Texas
Nolt, J.E., PhD . . . . . . Ohio State

Associate Professors

Arnold, D., PhD . . . . . . Minnesota
Hamlon, H.P., PhD . . . . . . Georgia
Reidy, D.A., JD, PhD . . . . Kansas

Assistant Professors

Coffman, E.J., PhD . . . . . . Notre Dame
Douglas, H., PhD . . . . . . Pittsburgh
Shaw, J.C., PhD . . . . . . Washington (St. Louis)

Adjunct Faculty

Beasley, A.D., MD . . . . . . Tennessee
Dunn, A.R., PhD . . . . . . Washington
English, M.R., PhD . . . . . . Tennessee
Reynolds, C.H., PhD . . . . . . Harvard
Wagner, C.G., PhD . . . . . . Duke

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
Corequisites
Three hours of logic, normally 130 or 135.

Requirements
Twenty-four hours of courses numbered 200 or above, including
3 hours of ethics (normally 340 or 440) and 6 hours in the his-
tory of philosophy (3 in ancient, normally 320, and 3 in modern,
normally 324). At least four of the courses for the major must be
at the 300-level or above, of which at least one must be at the
400-level or above. Majors are required to discuss their pro-
grams with a member of the philosophy faculty.

HONORS CONCENTRATION
Corequisite
Philosophy 135.

GPA Requirement for Graduation
3.25 GPA overall, 3.50 in Philosophy.

Course Requirements
At least 24 hours of philosophy courses at the 200-level or above,
at least 15 of which are at the 300-level or above, including at least 3
at the 400-level or above. At least 12 of the 24 hours must be in phi-
losophy honors courses. The 24 hours must include one course from
each of the following three pairs (at least two of them honors cours-
es): 320 or 327; 324 or 328; 340 or 347. At least one hour of 407
(Honors Thesis), passed with a B or better, must be included.

Minor in Philosophy
The minor consists of 18 hours in courses 200 or above.
Minors should discuss their program with a member of the phi-
losophy 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
Brening, M.J., PhD ............................................................... Oregon
Compton, R.N., PhD ............................................................. Tennessee
Crater, H.W. (UTSI), PhD ......................................................... Yale
Dagotto, E.R. (Distinguished Professor), PhD ................................ Bariloche (Argentina)
Dai, P., PhD .......................................................... Missouri
Davis, L. (UTSI), PhD ........................................................... Auckland (New Zealand)
Eguiluz, A.G. (Joint Faculty), PhD .............................................. Brown
Elston, S.B., PhD ................................................................. Massachusetts
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
Macek, J. (Distinguished Professor), PhD ................................ Rensselaer Polytechnic
Moreo, A. (Joint Faculty), PhD .................................................. Bariloche (Argentina)
Nazarowicz, W., PhD .......................................................... Warsaw (Poland)
Painter, L.R. (Special Assistant to the Chancellor), PhD ....... Tennessee
Plummer, E.W. (Distinguished Professor), PhD ................. Cornell
Quinn, J.J. (Lincoln Chair), PhD ............................................. Maryland
Read, K.F. (Joint Faculty), PhD .............................................. Cornell
Riedinger, LL. (Interim Vice Chancellor for Research), PhD .... Vanderbuilt
Siopsis, G., PhD ................................................................. California Institute of Technology
Sorensen, S.P., PhD .......................................................... Copenhagen (Denmark)
Thompson, J.R., PhD .......................................................... Duke
Weiting, H.H. (Joint Faculty), PhD ......................................... Groningen (Netherlands)
Zhang, Z. (Joint Faculty), PhD .................................................. Rutgers

Associate Professors
Efremenko, Y.Y. (Joint Faculty), PhD ......................................... ITEP (Russia)
Grzywacz, R., PhD .............................................................. Warsaw (Poland)
Parigger, C. (UTSI), PhD ......................................................... Otago (New Zealand)

Assistant Professors
Bazykin, V., PhD ................................................................. Illinois
Cardill, C.Y. (Joint Faculty), PhD .............................................. California
Jones, K.L., PhD ................................................................. Surrey (England)
Mannella, N., PhD ............................................................. California (Davis)
Papenbrock, T.F. (Joint Faculty), PhD ................................. Heidelberg (Germany)
Spanier, S.M., PhD ............................................................. Mainz (Germany)

Director of Undergraduate Laboratories
Parks, J.E., PhD ................................................................. Kentucky

Physics is the study of matter and energy and their interac-
tions 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 in-
terests 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 tech-
nological and industrial fields outside of physics. The astronomy
concentration is designed for students who may wish to do gradu-
ate work in astronomy or astrophysics. The general concentra-
tion 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, 241;
and Computer Science 102 are prerequisites to the major.

ACADEMIC CONCENTRATION
The academic concentration consists of 38 hours. Mathemat-
ics 231; Physics 250, 311, 312, 321, 361, 411, 412, 421, 431,
432, and 461. Physics 401 is recommended.

APPLIED CONCENTRATION
The applied concentration consists of 38 hours. Physics 250,
311, 312, 321, 361, 401, 421, 441, 442, 453, and 461.

ASTRONOMY CONCENTRATION
The astronomy concentration consists of 37 hours. Astrono-
my 217, 218, 411, 490 (3 hours), Physics 250, 311, 321, 411,
421, 431, and 461.

GENERAL CONCENTRATION
The general concentration consists 31-32 hours. Physics
250, 361, 380, 381, 382, 441, 442, 453, and 461, and one lab course,
chosen from 421 and 461.

HONORS CONCENTRATIONS
Students who complete all requirements for the academic,
applied, or astronomy concentrations will be awarded a degree
with honors if their cumulative GPA is at least 3.25, their GPA
in 300- and 400-level mathematics and physics courses is at
least 3.0, they complete a minimum of 12 hours in honors
courses, and they complete a written senior thesis reporting
results of research conducted under faculty supervision and
defended before a committee of three physics faculty mem-
bers. A minimum of 3 credit hours of Physics 493 is required.

Minor in Astronomy
An astronomy minor consists of 24 hours. One year of introd-
cutory astronomy; Astronomy 411, 490 (3); Physics 311-312, and 421.
Minor in Physics
A physics minor consists of 23-25 hours. Physics 137-138, 240; or 135-136, 240; and 12 hours from physics and astronomy courses numbered 300 and above.

DEPARTMENT OF POLITICAL SCIENCE
http://web.utk.edu/~polisci/
John Scheb, Interim Head

Professors
Cunningham, R.B., PhD ............................. Indiana
Fitzgerald, M.R., PhD ............................... Oklahoma
Folz, D.H., PhD ................................. Tennessee
Freeland, P.K., PhD .............................. Wisconsin
Gant, 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 ............................. North Carolina
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
Down, I., PhD ................................. Texas A&M
Hwang, W., PhD ............................... Michigan State
Jepson, E., PhD ................................. Wisconsin
Kelly, N., PhD ................................. North Carolina
Morgan, J.M., PhD ............................. North Carolina

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. A student may not declare a political science major until he/she has completed Political Science 101 (or 107) and Political Science 102. 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.

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.

United States Government and Politics/Public Administration

Comparative Government and Politics
350, 361, 451, 452, 454, 456, 459, 461, and 463.

International Relations

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.

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 3.30 in political science, and a minimum cumulative GPA of 3.00.

PUBLIC ADMINISTRATION CONCENTRATION
Students majoring in political science who wish to prepare for a career in public service may select the concentration in public administration. Political Science 101 or 107, 102, and Economics 201 are prerequisites to the major in political science in 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 and 401; two courses from Political Science 440, 441, 442; and two courses from Accounting 200 or 207, Economics 371, 472. 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).

DEPARTMENT OF PSYCHOLOGY
http://psychology.utk.edu
James E. Lawler, Head

Professors
Burghardt, G.M. (Alumni Distinguished Professor), PhD ............................. Chicago
Handler, L., PhD ................................. Michigan State
Hector, M., PhD ................................. Michigan State
Lawler, J.E., PhD ............................... North Carolina
Loussbury, J.W., PhD ............................. Michigan State
Malinckrodt, B., PhD ............................. Maryland
Malone, J.C., PhD ............................. Duke
Nash, M.R., PhD ............................... Ohio
Pollio, H., PhD ................................. Michigan
Saudargas, R.A., PhD ............................. Florida State
Sundstrom, E.D., PhD ............................. Utah
Travis, C.B., PhD .............................. California (Davis)
Wahl, R.G., PhD ............................... Washington

Associate Professors
Baldwin, D., PhD ............................... Kent State
Corbetta, D., PhD ............................... Geneva (Switzerland)
Gaertner, L., PhD ............................... North Carolina
Gordon, K., PhD ................................. North Carolina
Hopko, D., PhD ................................. West Virginia
Hutchens, T., PhD .............................. Georgia
Morgan, W.G., PhD ............................. Tennessee
Welsh, D.P., PhD ............................... Massachusetts

Assistant Professors
Cooper, M., PhD ............................... Georgia
Fite, P., PhD ................................. State University of New York (Buffalo)
Freeberg, T.M., PhD ............................. Indiana
Levy, J., PhD ................................. Indiana
Macleod, J., PhD ............................... Rochester
McNulty, J.K., PhD ............................. Florida
Moore, T., PhD ................................. Virginia Tech
Olson, M., PhD ............................... Indiana
The Psychology Department offers an honors concentration that is a specially designed individualized mentorship program. Chancellor's 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 3.25 will lead to consideration of a student's dismissal from the program. The honors concentration includes all the requirements of the psychology major and at least 12 hours of honors courses including at least 4 hours of Psychology 347, 3 hours of Psychology 367, 3 hours of Psychology 467.

Minor in Psychology
The minor consists of 110 or equivalent and 15 additional hours at the 300 level and above. (Psychology 399, 489, 491, 492, 493 cannot be used in this minor.)

DEPARTMENT OF RELIGIOUS STUDIES
http://web.utk.edu/~religion
Gilya G. Schmidt, Head

Professors
Fitzgerald, J.L., PhD ............................................. Chicago
Hackett, R.I.J., PhD ............................................ Aberdeen (UK)
Levering, M.L., PhD ............................................. Harvard
Reynolds, C.H., PhD ............................................ Harvard
Schmidt, G.G., PhD ............................................. Pittsburgh

Associate Professors
Hodges, J.O., PhD ............................................. Chicago
Hulsether, M.D., PhD .......................................... Minnesota
Stiebert, J., PhD ............................................... Glasgow (UK)

HONORS CONCENTRATION
The Psychology Department offers an honors concentration that is a specially designed individualized mentorship program. Chancellor's 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 3.25 will lead to consideration of a student's dismissal from the program. The honors concentration includes all the requirements of the psychology major and at least 12 hours of honors courses including at least 4 hours of Psychology 347, 3 hours of Psychology 367, 3 hours of Psychology 467.

Minor in Psychology
The minor consists of 110 or equivalent and 15 additional hours at the 300 level and above. (Psychology 399, 489, 491, 492, 493 cannot be used in this minor.)

DEPARTMENT OF RELIGIOUS STUDIES
http://web.utk.edu/~religion
Gilya G. Schmidt, Head

Professors
Fitzgerald, J.L., PhD ............................................. Chicago
Hackett, R.I.J., PhD ............................................ Aberdeen (UK)
Levering, M.L., PhD ............................................. Harvard
Reynolds, C.H., PhD ............................................ Harvard
Schmidt, G.G., PhD ............................................. Pittsburgh

Associate Professors
Hodges, J.O., PhD ............................................. Chicago
Hulsether, M.D., PhD .......................................... Minnesota
Stiebert, J., PhD ............................................... Glasgow (UK)

Assistant Professors
Scott, R., PhD ................................................. Northwestern
Shepardson, C.C., PhD ....................................... Duke

Adjunct Faculty
Heffernan, T.J.A., PhD ....................................... Cambridge (UK)

The mission of the Department of Religious Studies is the academic study of the role of religion in history and culture. It also requires an awareness that the literature and history and sensibilities of western European humanity are incomplete unless they are studied with those of other past and present cultures and civilizations.

RECENT CONCENTRATIONS
1. West Asia and Europe (choose one from two subcategories)
   Judaism – choose from 311, 312, 381, 385.
   Christianity – choose from 321, 322.
   Islam – choose from 332, 333.

2. Africa and the Americas (choose one from two subcategories)
   African Religions – choose from 302, 373.
   North American Religions – choose from 351, 355.
   African-American and African Diaspora Religions – choose from 352, 353.

3. South, Southeast, and East Asia (choose one from two subcategories)
   South Asia – choose from 313, 374, 376.
   Southeast Asia – choose from 376, 378, 382.
   East Asia – choose from 379, 380, 383, 384.

4. Methods and Issues in Religious Studies (choose one)
   Choose from 301, 302, 305, 320, 342.

Details regarding the major and religious studies courses are available in the departmental office, located in 501 McClung Tower, or from any member of the religious studies faculty.

Minor in Religious Studies
The minor consists of 15 hours of courses at the 300 level or above, not including related language courses. It is recommended that students minoring in religious studies discuss their program with a faculty member in the department.

DEPARTMENT OF SOCIOLOGY
http://web.utk.edu/~utscsocdep/
R. Scott Frey, Head

Professors
Frey, R.S., PhD ................................................. Colorado State
Jalata, A., PhD ................................................. State University of New York (Binghamton)
Reed, W.L., PhD ................................................. Boston
Shover, N.E., PhD ............................................... Illinois

Associate Professors
Bohon, S.A., PhD .............................................. Penn State
Bui, H.N., PhD .................................................. Michigan State
Cable, S., PhD .................................................. Penn State
Dahms, H.F., PhD .............................................. New School for Social Research
Dandaneau, S.P. (Associate Vice Provost, Director of Chancellor's Honors Program), PhD .............................................. Brandeis
Jones, R.E., PhD ............................................... Washington State
Kurth, S.B., PhD ............................................... Illinois (Chicago)
Shefner, J., PhD ............................................... California (Davis)

Assistant Professors
Feldmeyer, B., PhD ......................................... Penn State
Gellert, P.K., PhD .............................................. Wisconsin
Presser, L., PhD ............................................... Cincinnati
SOCIOMETRY 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 Sociology 110 or 120 or 121 or their honors equivalent and Sociology 201. The major consists of 27 lower-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 following five 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 – Mathematics 141-142; 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.

Minor in Sociology

The minor consists of 15 upper-division hours in sociology and must include 321 and 331. Prerequisites to the minor are Sociology 110 or 120 or their honors equivalent and Sociology 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 are either Sociology 110 or 120 and Sociology 201.

DEPARTMENT OF STATISTICS

See faculty list in the College of Business Administration.

Lecturers
Chumakov, Y., PhD ...................................................... Notre Dame
Degutis, B., PhD ........................................................... Tennessee
Fischer, C.C., JD ............................................................. Michigan
Hepner, R.L., PhD ......................................................... New School for Social Research
Morelock, J., PhD ............................................................ Penn State
Skladany, M., PhD ......................................................... Michigan State

Fischer, C.C., JD ............................................................. Michigan
Hayden, J., PhD ............................................................. Texas A&M

Adjunct Faculty
Strayhorn, T.L., PhD ...................................................... Virginia Tech

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 sexuality. 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.

STATISTICS MAJOR

Prerequisites to the major are Mathematics 141-142. The major requires 33 semester hours including the following.

- Statistics 201 or 251.
- Statistics 230, 330, 365, 471.
- Two courses selected from Statistics 472, 473, 474, 475; Mathematics 423, 424, 425.
- Mathematics 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

Calvin MacLean, Head

Professors
Black, W.R., MFA ....................................................... Illinois
Custer, M., MFA ............................................................ Wisconsin
MacLean, C., MFA ......................................................... Massachusetts

Associate Professors
Diamond, J., MFA ......................................................... New York
Van den Berg, K., PhD ................................................... Indiana
Weber, T., MFA ............................................................. Alabama
Yager, K., BFA .............................................................. Penn State

Assistant Professors
Buckley, K., BA ............................................................ Aurora
Copeland-Halter, T., MFA ................................................ New York
Pickart, C., MFA ............................................................. Penn State
Sams, J., MFA .............................................................. 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 areas approved by the department. At least half of the major must be at the 300 level or above.

Minor in Theatre

Theatre 100 is a prerequisite to a minor which consists of 15 hours of theatre courses, 6 of which must be upper division.
The College of Business Administration at the University of Tennessee is widely recognized for its leadership role in implementing some of the most innovative and exciting curricular changes occurring during the last forty years of management education.

The curriculum coursework is divided into four components — general education, pre-business core, business core, and major.

The 59 hours of general education focus on all aspects of human endeavor – written and oral communications; mathematics; social, behavioral, and natural sciences; humanities; foreign language; ethics; and the arts. General education courses span the student’s entire academic career.

The pre-business core courses (14 hours) are taken during the student’s second year. The pre-business core provides students with the fundamentals of business education, introducing the tools, the environment, and the functions of contemporary business practices.

Building on the pre-business core foundation, the business core (23 hours) consists of integrated contemporary business management modules in supply chain management, demand management, lean operations, information management, and integrated process management; discipline-specific courses in financial management and business strategy; and coursework on global and legal issues. As business management perspectives change, the topics in the business core will, by design, adapt.

Simultaneously, students are completing the coursework (24 hours) required by their chosen major. The College of Business Administration offers nine majors – accounting, economics, enterprise management, finance, human resource management, logistics, marketing, public administration, and statistics. Within the 24 hours of their major, students may study two areas of emphasis — their major with a collateral or their major with a dual concentration. With a collateral, students complete 15 hours in their major and 9 hours in their collateral area (with the exception of economics and statistics majors, who complete 18 hours in their major and 6 hours in their collateral area). With a dual concentration, students complete 12 hours in each area of emphasis. See the chart in this section for details of the collateral and dual concentration options for each major. A minimum grade of C must be earned in every course counted toward the major, including major, collateral, or dual concentration courses.

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. 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 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.

<table>
<thead>
<tr>
<th>Required Courses</th>
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<tbody>
<tr>
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<tr>
<td>Economics 201</td>
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<tr>
<td>Statistics 201</td>
<td>3</td>
</tr>
<tr>
<td>Business Administration 201</td>
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</tr>
<tr>
<td>Finance 301</td>
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</tr>
<tr>
<td>Marketing 300</td>
<td>3</td>
</tr>
<tr>
<td>Management 300</td>
<td>3</td>
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</table>

Total 23
All upper-division (300-level or above) coursework must be taken at the University of Tennessee. Students are responsible for meeting the listed prerequisites of any upper division courses taken. (For instance, Mathematics 125 or 141 is a prerequisite to Statistics 201.) Engineering students may substitute Chemical Engineering 301 for Statistics 201.

Faculty

Students in the College of Business Administration benefit from the countless faculty recognized for excellence in teaching, research, and public service. One of the first in the South to be accredited by the Association to Advance Collegiate Schools of Business International, the University of Tennessee’s College of Business Administration strives for excellence in all endeavors.

In addition to challenging students in the classroom, faculty also devote their energies to professional growth and commitment to the community by participating in other College of Business Administration programs, like the Global Business Institute, the 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 third year. With the wireless network at the University of Tennessee, students will be able to use their laptop computers almost anywhere on campus.

The Global Initiative

Seeking to instill a global perspective in all of its students, the College of Business Administration challenges undergraduate students to develop the requisite knowledge and skills to prosper in today’s global business environment. To help students meet that challenge, the college provides these critical tools – an enhanced core curriculum that covers international business topics in all relevant courses; extraordinary programs for international study and internships; and a unique opportunity to delve into the principles of international business through a collateral or dual concentration in international business.

Students who choose a collateral or dual concentration in international business will gain an understanding of how functional strategies are carried out and how to assess business opportunities in other cultures and countries. With the ability to appreciate different cultural perspectives, political, and economic institutions and to scan the broader environment of world events, students will be prepared to succeed in future international assignments in their careers.

Global Business Institute

The Global Business Institute, located in 328 Business Administration Building, serves as the primary catalyst for international awareness and change in the College of Business Administration. By offering 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.

Diversity Initiatives

The Office of Diversity Initiatives, located in 329 Business Administration Building, leads efforts to build a diverse college community by fostering a climate that respects, celebrates, and embraces diversity. The college stands firm in the belief that an appreciation of individuals from a multitude of backgrounds and experiences is a necessity in the global workforce.

We create and sustain a welcoming, supportive and inclusive climate through goals such as attracting and retaining faculty and staff from diverse backgrounds; attracting, retaining, and graduating students from historically under-represented populations; and ensuring that undergraduate curricular requirements include significant intercultural perspectives.

We recognize diversity in terms of ethnic, social, economic, and cultural differences.

---

### 2008 Majors with Collaterals and Concentrations

<table>
<thead>
<tr>
<th>Majors</th>
<th>Collaters 9 hours</th>
<th>Concentrations 12 hours</th>
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<tbody>
<tr>
<td>Accounting</td>
<td>☑</td>
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<tr>
<td>Economics</td>
<td>☑</td>
<td>☑</td>
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<tr>
<td>Enterprise Management</td>
<td>☑</td>
<td>☑</td>
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<tr>
<td>Finance</td>
<td>☑</td>
<td>☑</td>
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<tr>
<td>Human Resource Management</td>
<td>☑</td>
<td>☑</td>
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<tr>
<td>Logistics</td>
<td>☑</td>
<td>☑</td>
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<tr>
<td>Marketing</td>
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<td>☑</td>
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<tr>
<td>Public Administration²</td>
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<td>☑</td>
</tr>
<tr>
<td>Statistics</td>
<td>☑</td>
<td>☑</td>
</tr>
<tr>
<td>Information Management</td>
<td>☑</td>
<td>☑</td>
</tr>
<tr>
<td>International Business</td>
<td>☑</td>
<td>☑</td>
</tr>
<tr>
<td>Marketing</td>
<td>☑</td>
<td>☑</td>
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<tr>
<td>Operations Management</td>
<td>☑</td>
<td>☑</td>
</tr>
<tr>
<td>Statistics</td>
<td>☑</td>
<td>☑</td>
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<tr>
<td>Information Management</td>
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<td>International Business</td>
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<tr>
<td>Public Administration²</td>
<td>☑</td>
<td>☑</td>
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</tbody>
</table>

1. In addition to its collateral options, Economics also offers areas of focus in international economics, industrial organization, public economics, quantitative economics, money/macroeconomics, regional/urban economics, environmental economics, labor economics, and health economics.
2. Because public administration is interdisciplinary in design, it does not offer any collaterals or concentrations.
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, 329 Glocker, maintains a full-time staff of academic advisors to answer students’ questions concerning majors, curriculum, and elective options. Student advising is achieved through these professional advisors and through faculty mentors when students are admitted to a major. While the university’s policy requires students to have one mandatory academic planning session per year, the College of Business Administration considers academic planning to be so critical that we require our students to meet with an advisor every fall and spring semester. To schedule an appointment, sign up online at http://bus.utk.edu/undergrad.

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 123-125, or 141-142 (6 or 8 hours); Oral Communication (3 hours from Communication Studies 210 or 240); 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 (3.00 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 beyond 75 hours of completed coursework. Progression standards are subject to change. Current standards are always available in the Undergraduate Programs Office, 329 Glocker.

Appeals
Students who have been denied progression to a major within the College of Business Administration may appeal to the Undergraduate Admissions Appeals Committee. Information on appeal procedures may be obtained in the Undergraduate Programs Office, 329 Glocker.

Transfer Students within the University of Tennessee and from Other Institutions
Students in other colleges at the University of Tennessee or from other institutions should apply for 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 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 (3.00 for accounting majors).

Progression standards are subject to change. Current standards are available in the Undergraduate Programs Office, 329 Glocker.

Articulation Agreements
The College of Business Administration has special transfer articulation agreements with some Tennessee community colleges leading to admission with third-year standing in particular majors at the University of Tennessee. Students are awarded an associate’s degree by the specified community college and a baccalaureate degree by the University of Tennessee provided the student successfully completes all the courses required in a particular program and meets the progression standards. All other academic regulations of the degree-granting institutions must also be satisfied.

Details on specific programs and requirements are available from the Office of Undergraduate Admissions at the University of Tennessee or from the specified community college.

Enrichment Opportunities
Executive Undergraduate Program
Top students are invited to participate in 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 industry 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 3.00.
- 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 items.

- 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 in the Undergraduate Programs Office 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 the department granting credit.
Global Leadership Scholars

The Global Leadership Scholars Program offered by the College of Business Administration serves its talented and motivated undergraduate students. The program consists of specified honors classes, seminars in leadership training, international experiences, and extracurricular activities including community service. Taught by a cadre of designated honors faculty and invited guest lecturers, the program promotes the development of international and intercultural awareness, leadership, and personal and professional growth and responsibility. Upon application, students can be admitted at the end of their first year, and a secondary round of limited admission will occur at the end of the second year. Accepted students will be admitted to the major of their choice and will pursue a dual concentration in international business.

Admission Criteria

The admissions committee will employ a combination of the following evaluative information in assessing each candidate’s qualifications – UT cumulative grade point average, high school cumulative grade point average, ACT or SAT scores, academic references, demonstrated leadership experience, extra-curricular activities, and a written self-statement. A mandatory interview is required for all finalists.

Retention Criteria

Students are evaluated annually and must be in good standing to be retained. Cumulative grade point averages that drop below a 3.25 will incur probationary status, and students will be given one semester to raise their average above the 3.25 standard. Failure to improve one’s cumulative grade point average will lead to dismissal from the program. Grades are not the only criteria by which retention is judged. Other criteria including participation, leadership, class performance, and faculty feedback will also be used to judge annual retention.

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
Behn, B.K. (Ergen Professor & CBER Faculty Fellow),
PhD, CPA ........................................ Arizona State
Carcello, J.V. (Ernst & Young Professor),
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
Roth, H.P. (Warren L. Slagle Professor), PhD, CPA, CMA . Virginia Tech
Stanga, K.G. (Andersen Professor), PhD, CPA ....... Louisiana State
Williams, J.R. (Dean and Pilot Chair of Excellence in Leadership),
PhD, CPA ............................................ Arkansas

Associate Professors

Neal, T.L. (Dennix Hendrick Professor), PhD, CPA .......... Tennessee
Townsend, R.I., PhD, CPA ................................ Texas Tech
Woodroof, J.B., PhD, CPA ................................ Texas Tech

Assistant Professors

Bradley, R.V., PhD .................................... Auburn
Clinton, S.B., PhD, CPA ............................. Georgia
Fuller, R.M., PhD ..................................... Indiana
Luna, L., PhD, CPA ................................. Pennsylvania

Lecturers

Anderson, E.B., MAcc, CPA ......................... Tennessee
Hollander, A.S. (Distinguished Lecturer), PhD .......... Tennessee
Hughes, H.N., BS .................................... Tennessee
Mayfield, V.L., JD, MAcc, CPA ....................... Tennessee
Valades, K.L., MAcc, CPA ........................... Tennessee
West, A.R., MAcc .................................... Tennessee

ACCOUNTING MAJOR

The University of Tennessee has one of the leading accounting programs in the nation. The program emphasizes the conceptual and applied understanding of business information and prepares students for careers in accounting and business. The program has separate accounting accreditation from AACSB International and is one of the first accounting programs to have earned this designation. An accredited program, the UT accounting program continuously meets or exceeds a rigorous set of international accreditation standards and is peer reviewed on a regular basis.

The faculty strongly encourages students who desire to become Certified Public Accountants (CPAs) to continue their formal education in UT’s one-year Master of Accountancy (MAcc) program which is described in the Graduate Catalog. The primary objective of the 30 semester-hour MAcc program, which includes 21 graduate-level semester hours of accounting and 9 hours of business, is to prepare students for careers as CPAs. MAcc students select a specialty area in audit and controls or taxation. Taken together, the BS and MAcc programs provide graduates with the educational requirements to sit for the CPA exam as well as the academic preparation to begin successful careers as CPAs. Most states, including Tennessee, require 150 semester hours of education to sit for the CPA exam.

The UT accounting program offers its majors an opportunity to participate in two full-time, highly-structured internship programs. The faculty strongly encourages accounting majors to participate in one or both programs. The first internship program (summer program) emphasizes internships in industry. The industry internship occurs during the summer between the student’s third and fourth year. The second internship program (spring program) emphasizes internships with public accounting firms. Public accounting internships occur during the spring of the student’s fourth year and are designed for those students who intend to enroll in UT’s MAcc program.

The accounting department prepares students for entry into careers in general accounting or internal auditing and provides preparation for the Master of Accountancy program.

Preparation for general accounting is for those students who do not seek to become CPAs but instead desire careers in other areas of accounting or business (for example, managerial accounting). It also provides students with an introduction to major functional areas of accounting. The program requires students to choose a three-course collateral area in one of four areas that closely complement a career in accounting – finance, information management, international business, or logistics.

Requirements for the Bachelor of Science in Business Administration • Accounting Major • Collateral Option

First Year

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>Finance 301</td>
<td>Finance 301</td>
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<td>Information Management 341</td>
<td>Information Management 341</td>
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<td>Written Communication: English 101*, 102*</td>
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<td>Quantitative Reasoning: Mathematics 123*, 125* or 141*, 142*</td>
<td>Quantitative Reasoning: Mathematics 123*, 125* or 141*, 142*</td>
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<td>Natural Sciences*</td>
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<tr>
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Second Year

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<td>Written Communication: English 255*, 295*, or 355*</td>
<td>Written Communication: English 255*, 295*, or 355*</td>
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<td>Statistics 201</td>
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Third Year

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<td>Business Administration 341, 342</td>
<td>Business Administration 341, 342</td>
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### Accounting Collateral Options

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### INTERNATIONAL BUSINESS – Three courses from: International Business 409, 419, 429, 439, 449, or 459; and International Business 489.

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<th>Hours</th>
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<thead>
<tr>
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<tr>
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<thead>
<tr>
<th>Electives</th>
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### Third Year

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<tr>
<th>Business Administration 331, 332</th>
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<table>
<thead>
<tr>
<th>Business Administration 341, 342</th>
<th>Third Year</th>
<th>Hours</th>
</tr>
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<tbody>
<tr>
<td>– Business Administration 341, 342</td>
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<td>4</td>
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### Fourth Year

<table>
<thead>
<tr>
<th>Accounting 311</th>
<th>Fourth Year</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
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<table>
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<tr>
<th>Business Law 301</th>
<th>Fourth Year</th>
<th>Hours</th>
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<tbody>
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<table>
<thead>
<tr>
<th>International Business 489</th>
<th>Fourth Year</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>– International Business 489</td>
<td>3</td>
<td>12</td>
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<table>
<thead>
<tr>
<th>Management 402</th>
<th>Fourth Year</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>– Management 402</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Electives</th>
<th>Fourth Year</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>– Electives</td>
<td>3</td>
<td>7-11</td>
</tr>
</tbody>
</table>

* Meets University General Education Requirement.
1 Must be completed by the end of the First Year.
2 Students who complete English 118 with a grade of A or B will complete their English composition requirement by choosing English 102 or a second-year literature course in the English Department. If the second-year literature course appears on the Arts and Humanities list, the course may also be counted toward the Arts and Humanities requirement.
3 Mathematics – Mathematics 125 or 141 are prerequisites for Statistics 201, which is taken during the second semester of the Second Year. As a result, either Mathematics 125 or 141 must be completed by the end of the first semester of the Second Year. Students testing into Mathematics 100 or 119 must complete these courses during their First Year to ensure that Mathematics 125 or 141 can be completed during the first semester of the Second Year. Students who have not completed Mathematics 125 by the end of their First Year should take Mathematics 125 in the first semester of their Second Year, prior to taking Mathematics 123.
5 In the spring of their Third 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 Information Management 442 in the information management collateral, instead of Logistics 421 in the logistics collateral, and instead of one of the three required courses in the international business collateral.
6 Students completing the international business collateral will substitute Management 402.

### Requirements for the Bachelor of Science in Business Administration • Accounting Major • Dual Concentration with International Business

### First Year

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Written Communication: English 101*, 102*</td>
<td>3</td>
</tr>
<tr>
<td>Quantitative Reasoning: Mathematics 123*, 125* or 141*, 142*</td>
<td>6</td>
</tr>
<tr>
<td>Cultures and Civilizations: Intermediate Foreign Language*</td>
<td>6</td>
</tr>
<tr>
<td>Natural Sciences*</td>
<td>6</td>
</tr>
<tr>
<td>Social Sciences*</td>
<td>6</td>
</tr>
<tr>
<td>Oral Communication: Communication Studies 210* or 240*</td>
<td>3</td>
</tr>
</tbody>
</table>

### Second Year

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accounting 200</td>
<td>3</td>
</tr>
<tr>
<td>Social Sciences: Economics 201*</td>
<td>3</td>
</tr>
<tr>
<td>Written Communication: English 255*, 295*, or 355*</td>
<td>3</td>
</tr>
<tr>
<td>Statistics 201</td>
<td>3</td>
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<tr>
<td>Business Administration 201</td>
<td>4</td>
</tr>
<tr>
<td>Arts and Humanities*</td>
<td>6</td>
</tr>
<tr>
<td>Non-US History*</td>
<td>6</td>
</tr>
<tr>
<td>Electives</td>
<td>3</td>
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</tbody>
</table>

### Third Year

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Hours</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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</table>

### Fourth Year

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accounting 311</td>
<td>3</td>
</tr>
<tr>
<td>Business Law 301</td>
<td>3</td>
</tr>
<tr>
<td>International Business 489</td>
<td>12</td>
</tr>
<tr>
<td>Management 402</td>
<td>3</td>
</tr>
<tr>
<td>Electives</td>
<td>7-11</td>
</tr>
</tbody>
</table>

**INTERNAL AUDITING**

The internal auditing concentration (for finance, logistics, statistics, and marketing majors) is designed to provide high-performing graduates a path to corporate management by beginning a career in internal auditing with either a CPA firm, corporation, or governmental organization. Internal auditing provides a direct pathway to corporate management. An entry-level position in internal auditing functions as a management-training program. A corporate internal auditor learns a great deal about a company’s industry, operations, and business processes. Internal auditors working in CPA firms generally are exposed to a variety of businesses and industries. While some internal auditors focus on accounting matters, many internal auditors concentrate on finance or other aspects of business operations. Most business organizations plan for internal auditors to progress from the internal audit department to a management position in three to five years. Internal auditors working in CPA firms often migrate to corporate internal audit departments or other managerial positions with internal audit clients.

An internship usually is a prerequisite to placement of entry-level candidates. In connection with Career Services, the Department of Accounting and Information Management coordinates an internship program. To be eligible to interview, students will be expected to have at least a 3.50 overall GPA and at least a 3.20 in courses in the internal auditing concentration. For information regarding this program, please contact the Department of Accounting and Information Management.
DEPARTMENT OF ECONOMICS

http://econ.bus.utk.edu

Robert A. Bohm, Head

Professors
Bohm, R.A. (G.A. Spiva Scholar), PhD .................................................. Washington (St. Louis)
Clark, D.P. (Beamian Professor), PhD .................................................. Michigan State
Fox, W.F. (William B. Stokely Distinguished Professor) ........................................ Ohio State
Murray, M.N. (Douglas A. and Brenda Horne Professor), PhD ..................................... Syracuse

Associate Professors
Bruce, D. (Stokely Faculty Scholar), PhD .................................................. Syracuse
Gauger, J.A., PhD ....................................................................................... Iowa State
Mohsin, M. (Reagan Scholar), PhD ............................................................... York (Canada)
Santoro, R., PhD ......................................................................................... Ohio State

Assistant Professors
Chakraborty, A., PhD .................................................................................... Oregon
Evans, M. (CBER Faculty Fellow), PhD ...................................................... Colorado
Gilpatric, S., PhD ......................................................................................... Texas A&M
Price, M.K., PhD .......................................................................................... Maryland
Schau, G., PhD ................................................................................................. Purdue
Silva, S.R., PhD .............................................................................................. Tulane

Research Professor
Bray, L.G., PhD ............................................................................................... Tennessee
McKee, M., PhD .............................................................................................. Carlton (Canada)

Research Associate Professor
Burton, M., PhD .............................................................................................. Tennessee

Lecturer
Baker, K., PhD ................................................................................................. New Mexico
Bueckman, D., PhD .......................................................................................... Tennessee

Adjunct Faculty
Bjornstad, David, PhD ..................................................................................... Syracuse
Curlee, T.R., PhD ............................................................................................... Purdue

Emeriti Faculty
Bowly, R.L., PhD .............................................................................................. Texas
Carroll, S.L., PhD .............................................................................................. Harvard
Cole, W.E., PhD ................................................................................................. Texas
Chang, H.S., PhD .............................................................................................. Vanderbilt

ECONOMICS MAJOR

The economics major provides an opportunity to apply the theoretical and analytical rigor of basic managerial and macroeconomic tools to contemporary issues in economics and business. Students choose from a traditional option (24 hours in economics), a collateral option (complementary coursework in finance, mathematics, or statistics), or a dual concentration in international business. Electives, as well as major coursework under the traditional option, consider topics such as business/industrial organization and public finance, as well as international, quantitative, monetary, regional/urban, environmental, labor, and health economics. Majors pursue careers in the traditional business disciplines, consulting, all levels of government service, and a variety of other fields. The program provides excellent training for graduate work in economics, business, public policy, and law. Students planning to pursue graduate study in economics should select the quantitative economics and mathematics collateral option.

Requirements for the Bachelor of Science in Business Administration • Economics Major • Traditional Option

First Year

Hours Credit

Written Communication: English 101*, 102* ........................................... 6
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

Second Year

Accounting 200 ............................................................................................... 3
Social Sciences: Economics 201* .................................................................. 4
Written Communication: English 255*, 295*, or 355* ......................... 3 or 5
Statistics 201 .................................................................................................... 3
Business Administration 201 ......................................................................... 4
Arts and Humanities* ................................................................................... 6
US History Electives ....................................................................................... 3

Third Year

Business Administration 331, 332 ................................................................. 4
Business Administration 341, 342 ................................................................. 4
Ethics: Philosophy 243, 244, or 443 .............................................................. 4
Finance 301 .................................................................................................... 3

Electives ......................................................................................................... 3
Economics 312 ................................................................................................. 3
Economics 313 ................................................................................................. 3
Business Administration 353 ......................................................................... 3
Business Administration 361 ......................................................................... 3
Economics Major Coursework ...................................................................... 3

Fourth Year

Economics Major Coursework ...................................................................... 3
Business Law 301 ............................................................................................ 3
Economics Electives (four additional economics courses, with at least two at the 400 level) ......................................................... 12
Management 401 ............................................................................................ 3
Electives ......................................................................................................... 7-11

Total 120

Economics Major Coursework Options (choose one area of focus).

ENVIRONMENTAL ECONOMICS – Economics 362, 463.
HEALTH ECONOMICS – Economics 436, Public Health 300.
INTERNATIONAL ECONOMICS – Economics 322, 421.
INDUSTRIAL ORGANIZATION – Economics 331, 435.
LABOR ECONOMICS – Economics 441; Management 472.
MONEY/MACROECONOMICS – Economics 351, 413.
PUBLIC ECONOMICS – Economics 371, 472.
QUANTITATIVE ECONOMICS – Economics 381, 482.
REGIONAL/URBAN ECONOMICS – Economics 361; Finance 485
(Accounting 301 prerequisite).

* Meets University General Education Requirement.
1 Must be completed by the end of the First Year.
2 Students who complete English 118 with a grade of A or B will complete their English composition requirement by choosing English 102 or a second-year literature course in the English Department. If the second-year literature course appears on the Arts and Humanities list,
the course may also be counted toward the Arts and Humanities requirement.

3  Mathematics – Mathematics 125 or 141 are prerequisites for Statistics 201, which is taken during the second semester of the Second Year. As a result, either Mathematics 125 or 141 must be completed by the end of the first semester of the Second Year. Students testing into Mathematics 100 or 119 must complete these courses during their First Year to ensure that Mathematics 125 or 141 can be completed during the first semester of the Second Year. Students who have not completed Mathematics 125 by the end of their First Year should take Mathematics 125 in the first semester of their Second Year, prior to taking Mathematics 123.


COLLATERAL OPTION
Requirements for the Bachelor of Science in Business Administration • Economics Major • Collateral Option

Third Year  
Business Administration 331, 332  ........................................... 4  
Business Administration 341, 342  ........................................... 4  
Ethics: Philosophy 243, 244, or 443  ........................................... 3  
Finance 301  .......................................................... 3  
Economics 312  .......................................................... 3  
Economics 313  .......................................................... 3  
Business Administration 353  ............................................. 3  
Business Administration 361  ............................................. 3  
Collateral  ......................................................... 6  
Fourth Year  
Business Law 301  .......................................................... 3  
Collateral  ......................................................... 6  
Economics Electives (two additional economics courses at the 400 level)  ........................................... 6  
Management 401  .......................................................... 3  
Electives  ......................................................... 7-11  
Total 120

Economics Collateral Options
INDUSTRIAL ORGANIZATION AND FINANCE – Economics 331, 435; Finance 425 (Accounting 301 prerequisite), 455.
MONEY/MACROECONOMICS AND FINANCE – Economics 351, 413; Finance 425 (Accounting 301 prerequisite), 435 (Accounting 301 prerequisite).
QUANTITATIVE ECONOMICS AND MATH – Economics 381, 482; Mathematics 241 (Mathematics 142 prerequisite), 251.
QUANTITATIVE ECONOMICS AND STATISTICS – Economics 381, 482; Statistics 472 (Statistics 320 prerequisite), 475 (Statistics 320 prerequisite).

DUAL CONCENTRATION
Requirements for the Bachelor of Science in Business Administration • Economics Major • Dual Concentration with International Business

First Year  
1Written Communication: English 101*, 102* ........................................... 6  
3Quantitative Reasoning: Mathematics 123*, 125* or 141*, 142* .6 or 8  
Cultures and Civilizations: Intermediate Foreign Language*  ........................................... 6  
Natural Sciences*  ......................................................... 6 or 8  
Social Sciences*  ......................................................... 6  
Oral Communication: Communication Studies 210* or 240*  ........................................... 3  
Second Year  
4Accounting 200  .......................................................... 3  
4Social Sciences: Economics 201*  ........................................... 3  
Written Communication: English 255*, 295*, or 355*  ........................................... 3  
4Statistics 201  .......................................................... 4  
4Business Administration 201  ........................................... 4  
2Arts and Humanities*  ......................................................... 6  
5Non-US History  ......................................................... 3  
6Electives  ......................................................... 3  
Third Year  
Business Administration 331, 332  ........................................... 4  
Business Administration 341, 342  ........................................... 4  
Ethics: Philosophy 243, 244, or 443  ........................................... 3  
4Finance 301  .......................................................... 3  
2Arts and Humanities*  ......................................................... 6  
4Accounting 425 (Accounting 301 prerequisite), 435  ........................................... 3  
Business Law 301  .......................................................... 3  
Management 401  .......................................................... 3  
Electives  ......................................................... 7-11  
Total 120

Economics 312  .......................................................... 3  
Economics 313  .......................................................... 3  
4Business Administration 353  ........................................... 3  
Business Administration 361  ........................................... 3  
Business Law 301  .......................................................... 3  
International Business 489  ......................................................... 0  
Fourth Year  
4International Business  .......................................................... 12  
6Economics Electives (two additional economics courses, with at least one at the 400 level)  ........................................... 6  
4Management 402  .......................................................... 3  
6Electives  ......................................................... 7-11  
Total 120

* Meets University General Education Requirement.

1  Must be completed by the end of the First Year.

2  Students who complete English 118 with a grade of A or B will complete their English composition requirement by choosing English 102 or a second-year literature course in the English Department. If the second-year literature course appears on the Arts and Humanities list, the course may also be counted toward the Arts and Humanities requirement.

3  Mathematics – Mathematics 125 or 141 are prerequisites for Statistics 201, which is taken during the second semester of the Second Year. As a result, either Mathematics 125 or 141 must be completed by the end of the first semester of the Second Year. Students testing into Mathematics 100 or 119 must complete these courses during their First Year to ensure that Mathematics 125 or 141 can be completed during the first semester of the Second Year. Students who have not completed Mathematics 125 by the end of their First Year should take Mathematics 125 in the first semester of their Second Year, prior to taking Mathematics 123.

4  Students admitted to Global Leadership Scholars will complete the honors versions of these courses – Accounting 207, Economics 207, Business Administration 207, Statistics 207, Finance 307, Business Administration 357, and Management 407.


6  Students admitted to Global Leadership Scholars will fulfill 10 hours of electives with the following courses – Business Administration 217, 317, 417, 427, and 497.

7  Any four courses chosen from: International Business 409, 419, 429, 439, 449, or 459.

DEPARTMENT OF FINANCE
http://bus.utk.edu/finance
James W. Wansley, Head

Professors
Black, H.A. (James F. Smith, Jr. Professor), PhD  ........................................... Ohio State  
Boehm, T.P. (AmSouth Scholar), PhD  ........................................... Washington (St. Louis)  
DeGennaro, R.P. (SunTrust Professor), PhD  ........................................... Ohio State  
Ehrhardt, M.C. (Paul and Beverly Castagna Professor in Investments), PhD  ........................................... Georgia Tech  
Philippatios, G.C. (Distinguished Chaired Professor of Banking and Finance), PhD  ........................................... New York  
Wachowicz, Jr., J.M. (AmSouth Scholar), PhD  ........................................... Illinois  
Wansley, J.W. (Clayton Homes Chair of Excellence), PhD  ........................................... South Carolina

Associate Professors
Daves, P.R. (Stokely Faculty Scholar), PhD  ........................................... North Carolina  
Murphy, D.L., PhD  ........................................... Florida  
Woitke, T. (Voight Scholar), PhD  ........................................... Tulane

Assistant Professor
Fauer, L., PhD  ........................................... Florida

Lecturers
Murphy, S.P. (Distinguished Lecturer), MBA  ........................................... Loyola  
Sexton, L.S. (Distinguished Lecturer), MBA  ........................................... 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. The course in investments leads 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. The course in the management of financial institutions, as well as within the institutions and markets prepares students for opportunities in capital and financial analysis positions. The course in financial management, real estate development, mortgage lending and banking, real estate brokerage, appraising, taxation, law, property management, real estate development, mortgage lending and banking, construction, government loan guarantees, and insurance.

Requirements for the Bachelor of Science in Business Administration • Finance Major • Collateral Option

First Year  Hours Credit
1^Written Communication: English 101*, 102* ................................. 6
^Students completing the International Business collateral will substitute Management 401.
2Quantitative Reasoning: Mathematics 123*, 125* or 141*, 142* . .6 or 8
3Cultures and Civilizations: Intermediate Foreign Language* .......... 6
4Natural Sciences* .......................................................... 6 or 8
5Social Sciences* ......................................................... 3
6Oral Communication: Communication Studies 210* or 240*  .......... 3

Second Year  Hours Credit
Accounting 200 ......................................................... 3
Social Sciences: Economics 201* ........................................ 3
Written Communication: English 255*, 295*, or 355* ................. 3
Statistics 201 ............................................................... 3
Business Administration 201 ............................................. 4
^Arts and Humanities* .................................................. 6
4Non-US History ......................................................... 3
^Electives ................................................................. 3

Third Year  Hours Credit
Business Administration 331, 332 ......................................... 4
Business Administration 341, 342 ......................................... 4
Ethics: Philosophy 243, 244, or 443 ....................................... 3
Finance 301 ................................................................. 3
Accounting 301 ............................................................. 3
Business Administration 353 ................................................ 3
Business Administration 361 ................................................ 3
Management 401 ............................................................ 3
^Electives ................................................................. 7-11

Total 120

Fourth Year  Hours Credit
Business Law 301 .......................................................... 3
Finance 435 ................................................................. 3
Accounting 425 ............................................................. 3
Collateral ................................................................. 6

Total 120

Finance Collateral Options

ACCOUNTING – Accounting 321; and any one of Accounting 311, Information Management 341, or Accounting 431 (increase Finance Electives by 3 hours).
ECONOMICS – Economics 312, 313; and either Economics 421 or 482.
INFORMATION MANAGEMENT – Information Management 341, 342, and either 442 or 443.
INTERNATIONAL BUSINESS – Three courses from International Business 409, 419, 429, 439, 449, or 459; and International Business 489.
LOGISTICS – Logistics 310, 411, 421.

* Meets University General Education Requirement.
1 Must be completed by the end of the Third Year.
2 Students who complete English 118 with a grade of A or B will complete their English composition requirement by choosing English 102 or a second-year literature course in the English Department. If the second-year literature course appears on the arts and humanities list, the course may also be counted toward the arts and humanities requirement.
3 Mathematics – Mathematics 125 or 141 are prerequisites for Statistics 201, which is taken during the second semester of the Second Year. As a result, either Mathematics 125 or 141 must be completed by the end of the first semester of the Second Year. Students testing into Mathematics 100 or 119 must complete these courses during their First Year to ensure that Mathematics 125 or 141 can be completed during the first semester of the Second Year. Students who have not completed Mathematics 125 by the end of their First Year should take Mathematics 125 in the first semester of their Second Year, prior to taking Mathematics 126.
5 Students completing the International Business collateral will substitute Management 402.

Requirements for the Bachelor of Science in Business Administration • Finance Major • Dual Concentration with International Business

First Year  Hours Credit
1^Written Communication: English 101*, 102* ................................. 6
^Students completing the International Business collateral will substitute Management 401.
2Quantitative Reasoning: Mathematics 123*, 125* or 141*, 142* . .6 or 8
3Cultures and Civilizations: Intermediate Foreign Language* .......... 6 or 8
4Natural Sciences* .......................................................... 6 or 8
5Social Sciences* ......................................................... 3
6Oral Communication: Communication Studies 210* or 240*  .......... 3

Second Year  Hours Credit
Accounting 200 ......................................................... 3
Social Sciences: Economics 201* ........................................ 3
Written Communication: English 255*, 295*, or 355* ................. 3
Statistics 201 ............................................................... 3
Business Administration 201 ............................................. 4
^Arts and Humanities* .................................................. 6
4Non-US History ......................................................... 3
^Electives ................................................................. 3

Third Year  Hours Credit
Business Administration 331, 332 ......................................... 4
Business Administration 341, 342 ......................................... 4
Ethics: Philosophy 243, 244, or 443 ....................................... 3
Finance 301 ................................................................. 3
Accounting 301 ............................................................. 3
Information Management 341 ............................................. 3
Business Administration 353 ................................................ 3
Business Administration 361 ................................................ 3
Management 401 ............................................................ 3
^Electives ................................................................. 7-11

Total 120

Fourth Year  Hours Credit
Business Law 301 .......................................................... 3
Finance 435 ................................................................. 3
Finance 455 ................................................................. 3
Accounting 425 ............................................................. 3
Finance Elective: 3 hours from Finance 402, 475, 485, 493, 495, or International Business 449 ......................................................... 3
Management 401 ............................................................ 3
^Electives ................................................................. 7-11

Total 120

Students are encouraged to take Accounting 321.

Requirements for the Bachelor of Science in Business Administration • Finance Major • Dual Concentration with International Business

First Year  Hours Credit
1^Written Communication: English 101*, 102* ................................. 6
^Students completing the International Business collateral will substitute Management 401.
2Quantitative Reasoning: Mathematics 123*, 125* or 141*, 142* . .6 or 8
3Cultures and Civilizations: Intermediate Foreign Language* .......... 6 or 8
4Natural Sciences* .......................................................... 6 or 8
5Social Sciences* ......................................................... 3
6Oral Communication: Communication Studies 210* or 240*  .......... 3

Second Year  Hours Credit
^Accounting 200 ......................................................... 3
^Social Sciences: Economics 201* ........................................ 3
Written Communication: English 255*, 295*, or 355* ................. 3
^Statistics 201 ............................................................... 3
^Business Administration 201 ............................................. 3
^Arts and Humanities* .................................................. 6
^Non-US History ......................................................... 3
^Electives ................................................................. 3

Third Year  Hours Credit
Business Administration 331, 332 ......................................... 4
Business Administration 341, 342 ......................................... 4
Ethics: Philosophy 243, 244, or 443 ....................................... 3
Finance 301 ................................................................. 3
Accounting 301 ............................................................. 3
Business Administration 353 ................................................ 3
Business Administration 361 ................................................ 3
International Business 489 ................................................... 3

Fourth Year  Hours Credit
Finance 435 ................................................................. 3
Finance 455 ................................................................. 3

Total 120
The enterprise management major is designed to meet an increasing demand for a general management major that prepares individuals for starting small businesses, working in family businesses, or entering management training programs. The basis of the enterprise management major is coursework in marketing strategy frameworks, total quality management or microeconomics, managerial skills, personnel management, and business planning. Students then choose from collaterals in marketing, operations management, resource management, information management, or international business or a dual concentration in international business.

**Requirements for the Bachelor of Science in Business Administration • Enterprise Management Major • Collateral Option**

**First Year**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Written Communication: English 101*, 102*</td>
<td>6</td>
</tr>
<tr>
<td>Quantitative Reasoning: Mathematics 123*, 125* or 141*, 142* .6 or 8</td>
<td></td>
</tr>
<tr>
<td>History 201, 202, 241, 242, 247, 248, 255, 256, 261, 262</td>
<td></td>
</tr>
<tr>
<td>Latin American Studies 251, 252, Medieval Studies 201, 202</td>
<td></td>
</tr>
<tr>
<td>Business Administration 217, 317, 417, 427, 497</td>
<td></td>
</tr>
<tr>
<td>International Business 421 or Economics 419, 429, 439, 449, 459</td>
<td></td>
</tr>
</tbody>
</table>

**Second Year**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accounting 200</td>
<td>3</td>
</tr>
<tr>
<td>Social Sciences: Economics 201*</td>
<td>4</td>
</tr>
<tr>
<td>Written Communication: English 255*, 295*, or 355*</td>
<td>3</td>
</tr>
<tr>
<td>Statistics 201</td>
<td>3</td>
</tr>
<tr>
<td>Business Administration 353</td>
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</tr>
<tr>
<td>Business Administration 361</td>
<td>3</td>
</tr>
<tr>
<td>Management 331</td>
<td>3</td>
</tr>
<tr>
<td>Operations and Management Science 421 or Economics 312</td>
<td>3</td>
</tr>
<tr>
<td>Marketing 340</td>
<td>3</td>
</tr>
<tr>
<td>Electives</td>
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</tr>
<tr>
<td>Total 120</td>
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</table>

**Third Year**

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>Business Administration 331, 332</td>
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<tr>
<td>Business Administration 341, 342</td>
<td>4</td>
</tr>
<tr>
<td>Ethics Philosophy 243, 244, 443</td>
<td>3</td>
</tr>
<tr>
<td>Finance 301</td>
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<td>Management 331</td>
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<tr>
<td>Operations and Management Science 421 or Economics 312</td>
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<tr>
<td>Marketing 340</td>
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<tr>
<td>Electives</td>
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<tr>
<td>Total 120</td>
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**Fourth Year**

<table>
<thead>
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<td>Management 451</td>
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<td>Electives</td>
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<tr>
<td>Total 120</td>
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</tbody>
</table>

**Enterprise Management Collateral Options**

**INFORMATION MANAGEMENT** – Information Management 341, 342, and either 442 or 443.


**MARKETING** – Marketing 350, 452, 456, 458.

**OPERATIONS AND MANAGEMENT SCIENCE** – Operations and Management Science 341, 410, 441.

**RESOURCE MANAGEMENT** – Accounting 301, 321; Finance 425.

* Meets University General Education Requirement.

1 Must be completed by the end of the First Year.

2 Students who complete English 118 with a grade of A or B will complete their English composition requirement by choosing English 102 or a second-year literature course in the English Department. If the second-year literature course appears on the Arts and Humanities list, the course may also be counted toward the Arts and Humanities requirement.

3 Mathematics – Mathematics 125 or 141 are prerequisites for Statistics 201, which is taken during the second semester of the Second Year. As a result, either Mathematics 125 or 141 must be completed by the end of the first semester of the Second Year.
Mathematics 100 or 119 must complete these courses during their First Year to ensure that Mathematics 125 or 141 can be completed during the first semester of the Second Year. Students who have not completed Mathematics 125 by the end of their First Year should take Mathematics 125 in the first semester of their Second Year, prior to taking Mathematics 123.

1 Students who complete English 118 with a grade of A or B will complete their English composition requirement by choosing English 255, 295, or 355.

2 Students admitted to Global Leadership Scholars will fulfill 10 hours of electives with the following courses – Business Administration 217, 317, 417, 427, and 497.

3 Mathematics – Mathematics 125 or 141 are prerequisites for Statistics 201, which is taken during the second semester of the Second Year. As a result, either Mathematics 125 or 141 must be completed by the end of the first semester of the Second Year. Students testing into Mathematics 100 or 119 must complete these courses during their First Year to ensure that Mathematics 125 or 141 can be completed during the first semester of the Second Year. Students who have not completed Mathematics 125 by the end of their First Year should take Mathematics 125 in the first semester of their Second Year, prior to taking Mathematics 123.

4 Students admitted to Global Leadership Scholars will complete the honors versions of these courses – Accounting 207, Economics 207, Business Administration 207, Statistics 207, Finance 307, Business Administration 357, and Management 407.


6 Students admitted to Global Leadership Scholars will fulfill 10 hours of electives with the following courses – Business Administration 217, 317, 417, 427, and 497.

7 Any four courses chosen from International Business 409, 419, 429, 439, 449, or 459.

**HUMAN RESOURCE MANAGEMENT MAJOR**

The human resource management major is designed to meet the growing demand for qualified human resource practitioners armed with the skills required in today’s rapidly changing workplace. Human resource managers are involved in recruiting, training, and maintaining qualified workforces in government and industry. This involves such activities as screening and hiring employees, designing and administering salary and benefit programs, retaining and promoting employees, designing health and safety programs, counseling employees concerning job problems, and conducting workforce planning research.

The major is consistent with the Society for Human Resource Management’s model of knowledge and skills needed for successful practice and certification. Human resource management majors take coursework in organizational behavior, training systems, employee and labor relations, compensation and benefits, and staffing organizations. Students may choose from collateral information in management and international business or a dual concentration in international business.

**Requirements for the Bachelor of Science in Business Administration • Human Resource Management Major • Collateral Option**

<table>
<thead>
<tr>
<th>First Year</th>
<th>Hours Credit</th>
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<tbody>
<tr>
<td>1. Written Communication: English 101*, 102*</td>
<td>.6</td>
</tr>
<tr>
<td>2. Quantitative Reasoning: Mathematics 123*, 125* or 141*, 142*</td>
<td>.6 or 8</td>
</tr>
<tr>
<td>3. Written Communication: English 255*, 295*, or 355*</td>
<td>.6</td>
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<tr>
<td>4. Business Administration 207</td>
<td>.3</td>
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<tr>
<td>5. Social Sciences*</td>
<td>.6</td>
</tr>
<tr>
<td>6. Oral Communication: Communication Studies 210* or 240*</td>
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</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>120</strong></td>
</tr>
</tbody>
</table>

**Requirements for the Bachelor of Science in Business Administration • Enterprise Management Major • Dual Concentration with International Business**

<table>
<thead>
<tr>
<th>First Year</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Written Communication: English 101*, 102*</td>
<td>.6</td>
</tr>
<tr>
<td>2. Quantitative Reasoning: Mathematics 123*, 125* or 141*, 142*</td>
<td>.6 or 8</td>
</tr>
<tr>
<td>3. Cultural Studies: Intermediate Foreign Language*</td>
<td>.6</td>
</tr>
<tr>
<td>4. Natural Sciences*</td>
<td>.6 or 8</td>
</tr>
<tr>
<td>5. Social Sciences*</td>
<td>.3</td>
</tr>
<tr>
<td>6. Oral Communication: Communication Studies 210* or 240*</td>
<td>.3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>120</strong></td>
</tr>
</tbody>
</table>

**Human Resource Management Collateral Options**

**INFORMATION MANAGEMENT** – Information Management 341, 342, and either 442 or 443.

**INTERNATIONAL BUSINESS** – Three courses from International Business 409, 419, 429, 439, 449, or 459.

* Meets University General Education Requirement.
1 Mathematics – Mathematics 125 or 141 are prerequisites for Statistics 201, which is taken during the second semester of the Second Year. As a result, either Mathematics 125 or 141 must be completed by the end of the first semester of the Second Year. Students testing into Mathematics 100 or 119 must complete these courses during their First Year to ensure that Mathematics 125 or 141 can be completed during the second-year literature course. Students who have not completed Mathematics 125 by the end of their First Year should take Mathematics 125 in the first semester of their Second Year, prior to taking Statistics 123.


3 Students who complete English 118 with a grade of A or B will complete their English composition requirement by choosing English 102 or a second-year literature course in the English Department. If the second-year literature course appears on the Arts and Humanities list, the course may also be counted toward the Arts and Humanities requirement.

4 Students admitted to Global Leadership Scholars will fulfill 10 hours of electives with the following courses – Business Administration 217, 317, 417, 427, and 497.

5 Any four courses chosen from: International Business 409, 419, 429, 439, 449, or 459.

Requirements for the Bachelor of Science in Business Administration • Human Resource Management Major • Dual Concentration with International Business

First Year

Hours Credit

1 Written Communication: English 101*, 102* .............................. 6
2 Quantitative Reasoning: Mathematics 123*, 125*, 141*, 142*  .......... 3
3 Cultures and Civilizations: Intermediate Foreign Language* .......... 3
4 Natural Sciences* ......................................................... 6 or 8
5 Social Sciences* ............................................................ 3
6 Oral Communication: Communication Studies 210* or 240* ............ 3

Second Year

4 Accounting 200 ............................................................. 3
5 Social Sciences: Economics 201* ........................................ 3
6 Written Communication: English 255*, 295*, or 355* ............... 3
7 Statistics 257 ................................................................. 3
8 Business Administration 201 ............................................... 3
9 Arts and Humanities* .................................................... 6
10 Non-US History ........................................................... 3
11 Electives ................................................................. 3

Third Year

12 Business Administration 331, 332 ........................................... 4
13 Business Administration 341, 342 ........................................... 4
14 Ethics: Philosophy 243, 244, or 443 ....................................... 3
15 Finance 207 ................................................................. 3
16 Human Resource Management 330 ...................................... 3
17 Business Administration 2533 ............................................... 3
18 Business Administration 361 ............................................... 3
19 Human Resource Management 340 or 350 ......................... 3
20 Business Law 301 .......................................................... 3
21 International Business 489 .................................................. 0

Fourth Year

22 International Business ....................................................... 12
23 Human Resource Management 460 ..................................... 3
24 Human Resource Management 470 ..................................... 3
25 Management 402 .......................................................... 3
26 Electives ........................................................................... 7-11

Total 120

DEPARTMENT OF MARKETING AND LOGISTICS

http://ml.bus.utk.edu

Ted Stank, Head

Professors

Barnaby, D.J., PhD ...................................................... Purdue
Cadotte, E.R., PhD ...................................................... Ohio State
Gardial, S.F. (Associate Dean and Beaman Professor), PhD ........ Houston
Mentzer, 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

Associate Professors

Dabholkar, P.A., PhD .................................................... Georgia State
Flint, D.J. (Proffitt’s, Inc. Professor of Marketing), PhD .......... Tennessee
Holcomb, M.C., PhD ...................................................... Tennessee
Mollenkopf, D., PhD ....................................................... Drexel
Moon, M.A., PhD ......................................................... North Carolina
Myers, M.B. (Nestle USA Professor of Marketing), PhD .......... Michigan State
Reizenstein, R.C., PhD ..................................................... Cornell
Rinehart, L.M., PhD ....................................................... Tennessee
Sahin, F., PhD ............................................................... Texas A&M

Assistant Professors

Dan, S., PhD ................................................................. Texas A&M
Esper, T.L., PhD ........................................................... Arkansas
Tate, W., PhD ............................................................... Arizona State
Xu, S., PhD ................................................................. Michigan State

Lecturers

Collins, M.E. (Distinguished Lecturer), MBA ....................... Middle Tennessee State
Dittmann, J.P., PhD ........................................................ Missouri
Raines, C., MBA ........................................................... Case Western Reserve

Emeriti Faculty

Davis, Jr., F.W., PhD ...................................................... Michigan State
Dizer, G.N., DBA ........................................................... Indiana
Foggin, J.H., DBA ........................................................... Indiana
Mundy, R.A., PhD ........................................................... Penn State
Woodruff, R.B., DBA ....................................................... Indiana

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 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

<table>
<thead>
<tr>
<th>Year</th>
<th>Hours</th>
<th>Credit</th>
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<tr>
<td><strong>First Year</strong></td>
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<td>Written Communication: English 101*, 102*</td>
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<tr>
<td>Quantitative Reasoning: Mathematics 123*, 125* or 141*, 142* .6 or 8</td>
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<td>Courses and Civilizations: Intermediate Foreign Language*</td>
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<tr>
<td>Natural Sciences*</td>
<td>6 or 8</td>
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<tr>
<td>Social Sciences*</td>
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<tr>
<td>Oral Communication: Communication Studies 210* or 240*</td>
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<tr>
<td><strong>Second Year</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accounting 200</td>
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<td>Social Sciences: Economics 201*</td>
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<td>Written Communication: English 255*, 295*, or 355*.</td>
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<td>Statistics 201</td>
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<td>Business Administration 201</td>
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<tr>
<td>3Arts and Humanities*</td>
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<td>4Non-US History</td>
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<td>Electives</td>
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<td>Ethics: Philosophy 243, 244, or 443</td>
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<td>Logistics 421</td>
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<td>Logistics 460</td>
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<td>Management 401</td>
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<td>Electives</td>
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<tr>
<td><strong>Total 120</strong></td>
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</tbody>
</table>

## Logistics Collateral Options

**INFORMATION MANAGEMENT** – Information Management 341, 342, and either 442 or 443.

**INTERNATIONAL BUSINESS** – Three courses from: International Business 409, 419, 429, 439, 449, or 459; and International Business 489.

**MARKETING** – Marketing 340, 350; any two of Marketing 452, 456, or 458 (reduce elective hours by one).

**OPERATIONS MANAGEMENT** – Operations and Management Science 341, 441, and either 410 or 421.

* Meets University General Education Requirement.
1 Must be completed by the end of the First Year.
2 Students who complete English 118, Honors with a grade of A or B will complete their English composition requirement by choosing English 102 or a second-year literature course in the English Department. If the second-year literature course appears on the Arts and Humanities list, the course may also be counted toward the Arts and Humanities requirement.
3 Mathematics – Mathematics 125 or 141 are prerequisites for Statistics 201, which is taken during the second semester of the Second Year. As a result, either Mathematics 125 or 141 must be completed by the end of the first semester of the Second Year. Students testing into Mathematics 100 or 119 must complete these courses during their First Year to ensure that Mathematics 125 or 141 can be completed during the first semester of the Second Year. Students who have not taken Mathematics 125 by the end of their First Year should take Mathematics 122 in the first semester of their Second Year, prior to taking Mathematics 123.
5 Students completing the international business collateral will substitute Management 402.

## DUAL CONCENTRATIONS

### Requirements for the Bachelor of Science in Business Administration • Logistics Major • Dual Concentration with Information Management

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<tr>
<th>Year</th>
<th>Hours</th>
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<tbody>
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<td>Business Administration 331, 332</td>
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<tr>
<td>Business Administration 341, 342</td>
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<td></td>
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<tr>
<td>Ethics: Philosophy 243, 244, or 443</td>
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<td></td>
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<tr>
<td>Finance 301</td>
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<tr>
<td>Business Administration 353</td>
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<td>Business Administration 361</td>
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<td>Logistics 310</td>
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<td>Information Management 401</td>
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<td>Logistics 411</td>
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<td>Logistics 421 or 413</td>
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<td>Information Management 443</td>
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<td>Management 401</td>
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<tr>
<td>Electives</td>
<td>7-11</td>
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### Requirements for the Bachelor of Science in Business Administration • Logistics Major • Dual Concentration with Internal Auditing

<table>
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<td>Business Administration 341, 342</td>
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<td>Business Administration 361</td>
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<tr>
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<tr>
<td><strong>Fourth Year</strong></td>
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<td>Business Law 301</td>
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<td>Logistics 421 or 413</td>
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<td>Accounting 311</td>
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<td>Logistics 460</td>
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<tr>
<td>Management 401</td>
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<td></td>
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<tr>
<td><strong>Total 120</strong></td>
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</table>

6 Students are encouraged to take Accounting 321.

### Requirements for the Bachelor of Science in Business Administration • Logistics Major • Dual Concentration with International Business

<table>
<thead>
<tr>
<th>Year</th>
<th>Hours</th>
<th>Credit</th>
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<td>Written Communication: English 101*, 102*</td>
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<tr>
<td>Courses and Civilizations: Intermediate Foreign Language*</td>
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<tr>
<td>Natural Sciences*</td>
<td>6 or 8</td>
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<tr>
<td>Social Sciences*</td>
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<tr>
<td>Oral Communication: Communication Studies 210* or 240*</td>
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<tr>
<td><strong>Second Year</strong></td>
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<td></td>
</tr>
<tr>
<td>Accounting 200</td>
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<td></td>
</tr>
<tr>
<td>Social Sciences: Economics 201*</td>
<td>4</td>
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</tr>
<tr>
<td>Written Communication: English 255*, 295*, or 355*</td>
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<tr>
<td>Statistics 201</td>
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<td>Business Administration 201</td>
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<td></td>
</tr>
<tr>
<td>2Arts and Humanities*</td>
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<td></td>
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<td>4Non-US History</td>
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<td>Electives</td>
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<td></td>
</tr>
<tr>
<td><strong>Third Year</strong></td>
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<tr>
<td>Business Administration 331, 332</td>
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<tr>
<td>Business Administration 341, 342</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Ethics: Philosophy 243, 244, or 443</td>
<td>3</td>
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<td>Finance 301</td>
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Requirements for the Bachelor of Science in Business Administration • Logistics Major • Dual Concentration with Operations Management

<table>
<thead>
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</tr>
<tr>
<td>Business Administration 341, 342</td>
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<td>Ethics: Philosophy 243, 244, or 443</td>
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<td>Finance 301</td>
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<td>Business Administration 353</td>
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<tr>
<td>Marketing 340</td>
<td>.3</td>
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<td>Business Law 301</td>
<td>.3</td>
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<tr>
<td>Logistics 411</td>
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</tr>
<tr>
<td>Logistics 421 or 413</td>
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<tr>
<td>Operations and Management Science 421</td>
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<tr>
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<tr>
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Requirements for the Bachelor of Science in Business Administration • Logistics Major • Dual Concentration with Statistics

<table>
<thead>
<tr>
<th>Third Year</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Administration 331, 332</td>
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</tr>
<tr>
<td>Business Administration 341, 342</td>
<td>.4</td>
</tr>
<tr>
<td>Ethics: Philosophy 243, 244, or 443</td>
<td>.3</td>
</tr>
<tr>
<td>Finance 301</td>
<td>.3</td>
</tr>
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<td>.3</td>
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<tr>
<td>Business Administration 361</td>
<td>.3</td>
</tr>
<tr>
<td>Logistics 310</td>
<td>.3</td>
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<tr>
<td>Statistics 320</td>
<td>.3</td>
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<td>Business Law 301</td>
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<td>Logistics 411</td>
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</tr>
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<td>Logistics 421 or 413</td>
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</tr>
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<td>Statistics 365</td>
<td>.3</td>
</tr>
<tr>
<td>Statistics 471</td>
<td>.3</td>
</tr>
<tr>
<td>Statistics 474 or 475</td>
<td>.3</td>
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<tr>
<td>Logistics 460</td>
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</tr>
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<td></td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>First Year</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Written Communication: English 101*, 102*</td>
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<tr>
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<td>4. Natural Sciences*</td>
<td>.6 or 8</td>
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<td>5. Social Sciences*</td>
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</tr>
<tr>
<td>6. Oral Communication: Communication Studies 210* or 240*</td>
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</tr>
<tr>
<td><strong>Total 120</strong></td>
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### Requirements for the Bachelor of Science in Business Administration • Marketing Major • Dual Concentration with Statistics

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<tr>
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<th>Hours</th>
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<td>Business Administration 361</td>
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<td>Logistics 310</td>
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<tr>
<td>Electives</td>
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</table>

**Total 120**

### Marketing and Statistics Dual Concentration Options

**OPTION 1** – Statistics 320, 330, 471, and either 474 or 475.

**OPTION 2** – Statistics 320, 471, 474, 475.

### PUBLIC ADMINISTRATION (Intercollegiate Program)

**PUBLIC ADMINISTRATION MAJOR**

The public administration major is a joint program sponsored by the Departments of Economics and Political Science. It is designed for students interested in government, namely in the formation of public policy and the practice of public sector management among many other areas of the interface between the public and private sectors. The program combines general education in business principles with specific courses in the economic and political aspects of government policies. Students choose electives to focus their interest or expertise.

Public administration majors pursue careers in a wide variety of areas in both the private and public sectors, the latter at the federal, state, and local levels. Examples include tax administration and budget analysis, city management, governmental relations with large corporations and industry trade associations, the management of nonprofit organizations, policy analysis in a non-governmental organization, and the functional areas of government such as education, health, environment, and economic development. In addition to the Master of Public Administration degree, many undergraduate majors pursue graduate programs in law, economics, or public policy.

#### Requirements for the Bachelor of Science in Business Administration • Public Administration Major

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<tr>
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<tr>
<td>Arts and Humanities*</td>
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<tr>
<td>Non-US History*</td>
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<tr>
<td>Electives</td>
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**Total 120**

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2. Quantitative Reasoning: Mathematics 123*, 125* or 141*, 142*
3. Languages and Civilizations: Intermediate Foreign Language*
4. Natural Sciences*
5. Social Sciences*
6. Oral Communication: Communication Studies 210*, 240*
7. Arts and Humanities*
8. Non-US History*
DEPARTMENT OF STATISTICS, OPERATIONS AND MANAGEMENT SCIENCE

http://stat.bus.utk.edu
http://www.bus.utk.edu/mgmtsci

Kenneth C. Gilbert, Head

Professors
Bozdogan, H. (Toby and Brenda McKenzie Professor in Business), PhD ........................................... Illinois
Edirisinghe, C.P., PhD ........................................... British Columbia (Canada)
Gilbert, K.C., PhD ........................................... Tennessee
Guess, F.M., PhD ........................................... Florida State
Leitnaker, M.G., PhD ........................................... Kentucky
Mee, R.W., PhD ........................................... Iowa State
Noon, C.E., PhD ........................................... Michigan
Srinivasan, M.M. (Ball Corporation Distinguished Professor of Business), PhD .......................................... Northwestern

Associate Professors
Bensmail, H., PhD ........................................... Paris VI (France)
Bowers, M.R., PhD ........................................... Clemson
Leon, R.V., PhD ........................................... Florida State
Seaver, W.L., PhD ........................................... Texas A&M
Younger, M.S., PhD ........................................... Virginia Tech

Assistant Professors
Bichescu, B., PhD ........................................... Cincinnati
Petric, A., PhD ........................................... Rensselaer Polytechnic
Zaretzki, R., PhD ........................................... Cornell

Lecturers
Cwik, C.M. (Distinguished Lecturer), MS ........................................... Tennessee
Schmidhammer, J.L., PhD ........................................... Pittsburgh

Adjunct Faculty
Husch, D.S., PhD ........................................... Tennessee
McGuire, S.A., PhD ........................................... Kansas State

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 and will result in significant contributions toward solving a variety of important jobs. Well-paying jobs are available at the Bachelor of Science, Master of Science, and doctoral levels.

Requirements for the Bachelor of Science in Business Administration • Statistics Major • Collateral Option

First Year

3 Written Communication: English 101*, 102* ........................................... 6
2 Quantitative Reasoning: Mathematics 123*, 125* or 141*, 142* ........................................... 6 or 8
Arts and Humanities* ........................................... 3
Natural Sciences* ........................................... 6 or 8
Social Sciences* ........................................... 3
Oral Communication: Communication Studies 210* or 240* ........................................... 3

Second Year

Accounting 200 ........................................... 3
Social Sciences: Economics 201* ........................................... 4
Written Communication: English 255*, 295*, or 355* ........................................... 3
Statistics 201 ........................................... 3
Business Administration 201 ........................................... 4
2 Arts and Humanities* ........................................... 6
Non-US History ........................................... 3
Electives ........................................... 3

Third Year

Business Administration 331, 332 ........................................... 4
Business Administration 341, 342 ........................................... 4
Ethics: Philosophy 243, 244, or 443 ........................................... 3
Finance 301 ........................................... 3
Statistics 365 ........................................... 3
Business Administration 353 ........................................... 3
Business Administration 361 ........................................... 3
Statistics 320 ........................................... 3
Statistics 330 ........................................... 3
Electives ........................................... 3
**Fourth Year**

<table>
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<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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<tr>
<td>Statistics Electives: any two 400-level courses from Statistics or Mathematics 423 and 425</td>
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</tr>
<tr>
<td>Collateral</td>
<td>3</td>
</tr>
<tr>
<td>Management 401</td>
<td>3</td>
</tr>
</tbody>
</table>

| Electives                                 | 7-11  |

Total 120

**Statistics Collateral Options**

- **ECONOMICS** – Economics 312 or 313, 381.
- **FINANCE** – Finance 425 (Accounting 301 prerequisite); and one of Finance 435 (Accounting 301 prerequisite), 455, 475 (Accounting 301 prerequisite).
- **INFORMATION MANAGEMENT** – Information Management 341, 342.
- **LOGISTICS** – Logistics 310, 411.
- **MARKETING** – Marketing 340, 350.
- **OPERATIONS MANAGEMENT** – Operations and Management Science 341 and either 421 or 441.

* Meets University General Education Requirement.
1 Must be completed by the end of the First Year.
2 Students who complete English 118 with a grade of A or B will complete their English composition requirement by choosing English 102 or a second-year literature course in the English Department. If the second-year literature course appears on the Arts and Humanities list, the course may also be counted toward the Arts and Humanities requirement.
3 Mathematics – Mathematics 125 or 141 are prerequisites for Statistics 201, which is taken during the second semester of the Second Year. As a result, either Mathematics 125 or 141 must be completed by the end of the first semester of the Second Year. Students testing into Mathematics 100 or 119 must complete these courses during their First Year to ensure that Mathematics 125 or 141 can be completed during the first semester of the Second Year. Students who have not completed Mathematics 125 by the end of their First Year should take Mathematics 125 in the first semester of their Second Year, prior to taking Mathematics 123.

## DUAL CONCENTRATIONS

### Requirements for the Bachelor of Science in Business Administration, Statistics Major, or Dual Concentration with International Business

#### Third Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Business Administration 331, 332</td>
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<tr>
<td>Business Administration 341, 342</td>
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<td>Ethics: Philosophy 243, 244, or 443</td>
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<td>Finance 301</td>
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<td>Accounting 301</td>
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<td>Statistics 320</td>
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<td>Accounting 311</td>
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**Fourth Year**

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<td>Business Law 301</td>
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<td>Statistics 471</td>
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<td>Statistics 474 or 475</td>
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<tr>
<td>Accounting 411</td>
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</tr>
<tr>
<td>Management 401</td>
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5 Electives: 7-11

Total 120

### Requirements for the Bachelor of Science in Business Administration, Statistics Major, or Dual Concentration with International Business

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<table>
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<tr>
<th>Course</th>
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<tr>
<td>Written Communication: English 101*, 102*</td>
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</tr>
<tr>
<td>Natural Sciences*</td>
<td>6 or 8</td>
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<tr>
<td>Oral Communication: Communication Studies 210* or 240*</td>
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#### Second Year

<table>
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#### Third Year

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<tr>
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#### Fourth Year

<table>
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<tbody>
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<td>Management 402</td>
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<tr>
<td>Electives</td>
<td>7-11</td>
</tr>
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</table>

Total 120

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4 Students admitted to Global Leadership Scholars will complete the honors versions of these courses – Accounting 207, Economics 207, Business Administration 207, Statistics 207, Finance 307, Business Administration 357, and Management 407.
5 Any four courses chosen from: International Business 409, 419, 429, 439, 449, or 459.

### Requirements for the Bachelor of Science in Business Administration, Statistics Major, or Dual Concentration with International Business

#### Third Year

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5 Electives: 7-11

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### Requirements for the Bachelor of Science in Business Administration, Statistics Major, or Dual Concentration with International Business

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</table>

5 Electives: 7-11

Total 120

5 Students are encouraged to take Accounting 321.


### Requirements for the Bachelor of Science in Business Administration • Statistics Major • Dual Concentration with Marketing

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<td>Marketing 340</td>
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</tr>
<tr>
<td>Business Law 301</td>
<td>3</td>
</tr>
<tr>
<td>Statistics Dual Concentration</td>
<td>3</td>
</tr>
<tr>
<td>Statistics and Marketing Dual Concentration Options</td>
<td></td>
</tr>
<tr>
<td>OPTION 1 – Statistics 320, 330, 471, and either 474 or 475.</td>
<td></td>
</tr>
<tr>
<td>OPTION 2 – Statistics 320, 471, 474, 475.</td>
<td></td>
</tr>
</tbody>
</table>

### Fifth Year Master of Science

Students may earn a Bachelor of Science (majoring in mathematics or statistics) and a Master of Science with a major in statistics 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.

- To apply, a student must earn a grade of B or better in Mathematics 142 (148) and Mathematics 241 (247) and have a U.T. cumulative GPA of 3.25 or greater with 60 or more credit hours earned.
- To continue, a student must complete at least 96 hours of undergraduate credit prior to the fourth year with a B average (3.00) or better.
- Complete the requirements for your first undergraduate degree by the end of your fourth year, but not earlier.
- Complete an additional 10 hours of statistics courses (Statistics 566, 572 and 573) graduate credit by submitting a "Senior Requesting Graduate Credit” form and obtaining approval through the Graduate School. These courses must be taken in the fourth year and may not be used to fulfill any requirements for the undergraduate degree. Note: Each semester you are registered for a graduate course, your total credit for undergraduate and graduate classes may not exceed 15.
- In the fifth year, including the summer preceding or following the fifth year, complete requirements for the Master of Science degree as detailed in the Graduate Catalog. This will typically require 12 credits per semester.

The Department of Statistics, Operations and Management Science awards graduate assistantships each year. The assistantship pays graduate tuition, as well as a stipend for living expenses. Fourth year students who complete at least 6 credits of graduate course work toward the Master of Science degree with a B average or better will be given priority for a graduate teaching assistantship from the department beginning in the academic year following awarding of the Bachelor of Science degree.

### Requirements for Fifth Year Master of Science • Statistics Major

<table>
<thead>
<tr>
<th>First Year</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1Written Communication: English 101*, 102*</td>
<td>6</td>
</tr>
<tr>
<td>2Quantitative Reasoning: Mathematics 141*, 142*</td>
<td>8</td>
</tr>
<tr>
<td>3Cultures and Civilizations: Intermediate Foreign Language*</td>
<td>6</td>
</tr>
<tr>
<td>4Natural Sciences*</td>
<td>6 or 8</td>
</tr>
<tr>
<td>5Statistics 201</td>
<td>3</td>
</tr>
<tr>
<td>6Electives</td>
<td>3-5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accounting 200</td>
</tr>
<tr>
<td>Social Sciences: Economics 201*</td>
</tr>
<tr>
<td>Statistics 320 and 330</td>
</tr>
<tr>
<td>Mathematics 241 and 251</td>
</tr>
<tr>
<td>Oral Communication: Communication Studies 210* or 240*</td>
</tr>
<tr>
<td>Written Communication: English 255*, 295*, or 355*</td>
</tr>
<tr>
<td>Business Administration 201</td>
</tr>
<tr>
<td>2Arts and Humanities*</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Third Year</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>
</tr>
<tr>
<td>Ethics: Philosophy 243, 244, or 443</td>
<td>3</td>
</tr>
<tr>
<td>Statistics 365, 471, 474, and 475</td>
<td>12</td>
</tr>
<tr>
<td>Business Administration 353 and 361</td>
<td>6</td>
</tr>
<tr>
<td>Finance 301</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fourth Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Statistics 566, 572, and 573 (for graduate credit)</td>
</tr>
<tr>
<td>Collateral</td>
</tr>
<tr>
<td>Business Law 301</td>
</tr>
<tr>
<td>Management 401</td>
</tr>
<tr>
<td>2Arts and Humanities*</td>
</tr>
<tr>
<td>4Non-US History</td>
</tr>
<tr>
<td>Social Sciences*</td>
</tr>
</tbody>
</table>

Total 120 hours + 9 hours graduate credit

### Statistics Collateral Options

| ECONOMICS – Economics 312 or 313, 381. | |
| FINANCE – Finance 425 (Accounting 301 prerequisite; and one of Finance 435 (Accounting 301 prerequisite), 455, 475 (Accounting 301 prerequisite), 485 (Accounting 301 prerequisite). | |
| INFORMATION MANAGEMENT – Information Management 341, 342. | |
| LOGISTICS – Logistics 310, 411. | |
| MARKETING – Marketing 340, 350. | |
| OPERATIONS MANAGEMENT – Operations and Management Science 341 and either 410 or 421. | |

### 5th Year

- First summer – Internship: Comprehensive exam over Statistics 572, 573.
- Fall – Statistics 561 (1), 563 (3), 579 (3), 581 (1), 592 (1), and Elective (3).
- Spring – Statistics 564 (3), 578 (3), and Elective (3).
- Second summer – Statistics 593 (3); Comprehensive exam over Statistics 563, 564.

Total hours for Master of Science 33
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. 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 college-wide master’s program are accredited by the Accrediting Council on Education in Journalism and Mass Communication. Information sciences master’s program is accredited by the American Library Association and the National Council for Accreditation of Teacher Education.

Exchange programs with the Dutch School of Journalism and Communication, Utrecht, and the Danish School of Journalism, Arthus, offer students an opportunity for a European semester. Tennessee students study European journalism and communication in the Netherlands or Denmark, but maintain their enrollment at the University of Tennessee, 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.

Progression Requirements

Entering and transfer students are first associated with the college as pre-majors. Students may progress into a major in communication studies after completing at least 30 hours of coursework, including the college gateway course (Communication and Information 150), with a minimum 2.50 UTK cumulative GPA.

Entering students may progress into a major in journalism and electronic media after completing at least 30 hours of coursework, including the college gateway course (Communication and Information 150), with a minimum 2.50 cumulative GPA. Transfer students may progress into a major in journalism and electronic media after completing at least 30 hours of coursework, including the college gateway course (Communication and Information 150) and earning a minimum of 12 hours at the University of Tennessee, Knoxville, with a minimum 2.50 cumulative GPA.

Entering students and students from other University of Tennessee colleges may be considered for progression into a major in advertising or public relations after completing the first-year curriculum in advertising or 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 min-
imum 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 into a major, they may not enroll in college courses numbered 300 or above.

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, journalism and electronic media, or public relations requirements. At least 80 hours must be taken in courses other than journalism and electronic media, advertising and/or public relations, with no fewer than 65 hours from the College of Arts and Sciences. Students must achieve a cumulative grade point average of at least 2.00 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 a C in all communication studies courses completed for the hours to count toward requirements for the major.

For both the BA and BS, at least 18 hours in major courses must be taken at the University of Tennessee, Knoxville.

Minors
Disciplinary minors are offered in communication studies, information studies and technology, and journalism and electronic media. Students interested in a disciplinary minor should contact the director of the appropriate school.

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. Students interested in an interdisciplinary minor should contact the Director of Advising.

At least six of the credit hours required for a minor must be completed at the University of Tennessee, Knoxville.

Minor in Communication and Information*

<table>
<thead>
<tr>
<th>Required Courses</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication and Information 150</td>
<td>3</td>
</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>
<td>6</td>
</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>
</tr>
<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.

SCHOOL OF ADVERTISING AND PUBLIC RELATIONS
http://www.cci.utk.edu/advpr/
Ronald E. Taylor, Director

Professors
Hayley, E., PhD ................................................... Georgia
Hovland, R., PhD .................................................. Illinois
Hoy, M., PhD ....................................................... Oklahoma State
Taylor, R.E., PhD ................................................... Illinois

Associate Professors
Fall, L.T., PhD ..................................................... Michigan State
McMillian, S. (Associate Dean), PhD .............................. Oregon
Morrison, M., PhD ................................................... Georgia
White, C.L., PhD ................................................... Georgia

Assistant Professors
Avery, E.J., PhD .................................................... Georgia
Blakeman, R., MA ..................................................... Southern Methodist
Childers, C.C., PhD ................................................... Alabama
Haygood, D., PhD .................................................. North Carolina
Palenchar, M., PhD ................................................... Florida

ADVERTISING MAJOR
Requirements for the Bachelor of Science in Communication • Advertising Major

<table>
<thead>
<tr>
<th>First Year</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>English 101*, 102*</td>
<td>8</td>
</tr>
<tr>
<td>Communication and Information 150</td>
<td>3</td>
</tr>
<tr>
<td>1Foreign Language*</td>
<td>6</td>
</tr>
<tr>
<td>Anthropology 130*</td>
<td>3</td>
</tr>
<tr>
<td>2Natural Science Electives*</td>
<td>8</td>
</tr>
<tr>
<td>Mathematics 119 or 123*</td>
<td>3</td>
</tr>
<tr>
<td>Mathematics 125* or 141*</td>
<td>3-4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Year</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advertising 250</td>
<td>3</td>
</tr>
<tr>
<td>Public Relations 270</td>
<td>3</td>
</tr>
<tr>
<td>3History 241*, 242* or 261*, 262*</td>
<td>6</td>
</tr>
<tr>
<td>4English Literature Electives*</td>
<td>6</td>
</tr>
<tr>
<td>Economics 201*</td>
<td>4</td>
</tr>
<tr>
<td>Statistics 201*</td>
<td>3</td>
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<tr>
<td>Accounting 200</td>
<td>3</td>
</tr>
<tr>
<td>Advertising 310</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>120</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Third Year</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Administration 201</td>
<td>4</td>
</tr>
<tr>
<td>Psychology 110*</td>
<td>3</td>
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<tr>
<td>Advertising 340</td>
<td>3</td>
</tr>
<tr>
<td>Advertising 350</td>
<td>3</td>
</tr>
<tr>
<td>Advertising 360</td>
<td>3</td>
</tr>
<tr>
<td>Advertising 380</td>
<td>1</td>
</tr>
<tr>
<td>Communication Studies 240*</td>
<td>3</td>
</tr>
<tr>
<td>Marketing 300</td>
<td>3</td>
</tr>
<tr>
<td>Management 300</td>
<td>3</td>
</tr>
<tr>
<td>5Arts and Sciences Electives</td>
<td>6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fourth Year</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psychology 360</td>
<td>3</td>
</tr>
<tr>
<td>Advertising 450</td>
<td>3</td>
</tr>
<tr>
<td>Advertising 470</td>
<td>3</td>
</tr>
<tr>
<td>Advertising 480</td>
<td>3</td>
</tr>
<tr>
<td>Communication and Information Elective</td>
<td>3</td>
</tr>
<tr>
<td>5Arts and Sciences Electives</td>
<td>3</td>
</tr>
<tr>
<td>6General Electives</td>
<td>3-4</td>
</tr>
</tbody>
</table>

* Meets University General Education Requirement.
1 Six hours of foreign language (same language) at the intermediate level.
2 This requirement is met by taking two courses from Astronomy 161 or 217, 162 or 218; Biology 101, 102, 111, 112, 130, 140, 157; Chemistry 100, 110, 120 or 128, 130 or 138; Geography 131, 132; Geology 101 or 107, 102 or 108, 103.
3 Completion of one sequence. History 241-242 is the preferred sequence.
4 English Literature Electives – English 201 or 207, 202 or 208, 206, 221, 222, 231 or 237, 232 or 238, 233, 251, 252, 253, 254.
Any course not taught in advertising, journalism and electronic media, or public relations.

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

PUBLIC RELATIONS MAJOR
Requirements for the Bachelor of Science in Communication • Public Relations Major

<table>
<thead>
<tr>
<th>First Year</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>English 101*, 102*</td>
<td></td>
<td>.6</td>
</tr>
<tr>
<td>Communication and Information 150</td>
<td></td>
<td>.3</td>
</tr>
<tr>
<td>¹Foreign Language*</td>
<td></td>
<td>.6</td>
</tr>
<tr>
<td>Anthropology 130*</td>
<td></td>
<td>.3</td>
</tr>
<tr>
<td>²Natural Science Electives</td>
<td></td>
<td>.8</td>
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<tr>
<td>Mathematics 119 or 123*</td>
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<td>.3</td>
</tr>
<tr>
<td>Mathematics 125* or 141*</td>
<td></td>
<td>3-4</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Second Year</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Advertising 250</td>
<td></td>
<td>.3</td>
</tr>
<tr>
<td>Public Relations 270</td>
<td></td>
<td>.3</td>
</tr>
<tr>
<td>³History 211*, 221* or 231, 241*, 251, 261, 262, 271*</td>
<td></td>
<td>.6</td>
</tr>
<tr>
<td>Journalism and Electronic Media 200*</td>
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<td>.3</td>
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<tr>
<td>Economics 201*</td>
<td></td>
<td>.3</td>
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<tr>
<td>Statistics 201*</td>
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<tr>
<td>Accounting 200</td>
<td></td>
<td>.3</td>
</tr>
<tr>
<td>⁴English Literature Electives*</td>
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<td>.6</td>
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<table>
<thead>
<tr>
<th>Third Year</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Administration 201</td>
<td></td>
<td>.4</td>
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<tr>
<td>Psychology 110*</td>
<td></td>
<td>.3</td>
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<tr>
<td>Journalism and Electronic Media 333</td>
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<td>.3</td>
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<td>Advertising 310</td>
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<td>.3</td>
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<tr>
<td>Public Relations 380</td>
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<td>1</td>
</tr>
<tr>
<td>Communication Studies 240*</td>
<td></td>
<td>.3</td>
</tr>
<tr>
<td>Marketing 300</td>
<td></td>
<td>.3</td>
</tr>
<tr>
<td>⁵Arts and Sciences Elective</td>
<td></td>
<td>.3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fourth Year</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Psychology 360</td>
<td></td>
<td>.3</td>
</tr>
<tr>
<td>Public Relations 470</td>
<td></td>
<td>.3</td>
</tr>
<tr>
<td>Communication Studies 440 or Psychology 440</td>
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<td>.3</td>
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<td>.3</td>
</tr>
<tr>
<td>Journalism and Electronic Media 400</td>
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<td>.3</td>
</tr>
<tr>
<td>⁵Arts and Sciences Elective</td>
<td></td>
<td>.9</td>
</tr>
<tr>
<td>⁶General Elective</td>
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<td>0-1</td>
</tr>
</tbody>
</table>

Total 120

¹ Meets University General Education Requirement.
² This requirement is met by taking two courses from Astronomy 161 or 217, 162 or 218; Biology 101, 102, 111, 112, 130, 140, 157; Chemistry 100, 110, 120 or 128, 130 or 138; Geography 131, 132; Geology 101 or 107, 102 or 108, 103.
³ Completion of one sequence. History 241-242 is the preferred sequence.
⁴ English Literature Electives – English 201 or 207, 202 or 208, 206, 221, 222, 231 or 237, 232 or 237, 232, 233, 251, 252, 253, 254.
⁵ Any course from the College of Arts and Sciences not currently required.
⁶ Any course not taught in advertising, journalism and electronic media, or public relations.

SCHOOL OF COMMUNICATION STUDIES
http://www.cci.utk.edu/commstudies/
John W. Haas, Director

Associate Professors
Glenn, R.W., PhD ........................................... Northwestern
Haas, J.W., PhD ........................................... Kentucky
Kupritz, V.W., PhD ....................................... Virginia Tech
Violanti, M.T., PhD ....................................... Kansas

Assistant Professors
Ambler, R.S., PhD ......................................... Ohio State
Kotowski, M.R., PhD ...................................... Michigan State
Levine, K.J., PhD ........................................... Michigan State
Tang, L., PhD ........................................... Southern California

COMMUNICATION STUDIES MAJOR
Requirements for the Bachelor of Arts in Communication • Communication Studies Major

<table>
<thead>
<tr>
<th>First Year</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication and Information 150</td>
<td></td>
<td>.3</td>
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<tr>
<td>Communication Studies 201</td>
<td></td>
<td>.3</td>
</tr>
<tr>
<td>English 101*, 102*</td>
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<td>.6</td>
</tr>
<tr>
<td>¹Quantitative Reasoning Elective*</td>
<td></td>
<td>.3</td>
</tr>
<tr>
<td>Psychology 110*</td>
<td></td>
<td>.3</td>
</tr>
<tr>
<td>²Natural Science Electives</td>
<td></td>
<td>.8</td>
</tr>
<tr>
<td>³Arts and Humanities Elective*</td>
<td></td>
<td>.3</td>
</tr>
<tr>
<td>General Elective</td>
<td></td>
<td>.1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Year</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication Studies 210* or 240*</td>
<td></td>
<td>.3</td>
</tr>
<tr>
<td>Communication Studies 250 or 270</td>
<td></td>
<td>.3</td>
</tr>
<tr>
<td>⁴Social Sciences Elective</td>
<td></td>
<td>.3</td>
</tr>
<tr>
<td>⁵History 211*, 221* or 231, 241*, 251, 261, 262, 271*</td>
<td></td>
<td>.6</td>
</tr>
<tr>
<td>Mathematics 115* or Statistics 201*</td>
<td></td>
<td>.3</td>
</tr>
<tr>
<td>³Arts and Humanities Elective*</td>
<td></td>
<td>.3</td>
</tr>
<tr>
<td>⁶Foreign Language*</td>
<td></td>
<td>.6</td>
</tr>
<tr>
<td>⁷Advanced Composition Elective*</td>
<td></td>
<td>.3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Third Year</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication Studies 300, 310, 320, or 330</td>
<td></td>
<td>.3</td>
</tr>
<tr>
<td>Communication Studies 340</td>
<td></td>
<td>.3</td>
</tr>
<tr>
<td>Communication Studies 350</td>
<td></td>
<td>.3</td>
</tr>
<tr>
<td>Communication Studies Electives</td>
<td></td>
<td>.6</td>
</tr>
<tr>
<td>⁹Arts and Sciences Electives</td>
<td></td>
<td>.6</td>
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<tr>
<td>General Electives</td>
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<table>
<thead>
<tr>
<th>Fourth Year</th>
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<tbody>
<tr>
<td>Communication Studies 499</td>
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<td>.3</td>
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<tr>
<td>Communication Studies Elective</td>
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</tr>
<tr>
<td>¹⁰Arts and Sciences Electives</td>
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<td>.3</td>
</tr>
<tr>
<td>⁹Arts and Sciences Electives</td>
<td></td>
<td>.6</td>
</tr>
<tr>
<td>⁹College Electives</td>
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<td>.6</td>
</tr>
<tr>
<td>General Electives</td>
<td></td>
<td>.12</td>
</tr>
</tbody>
</table>

Total 120

¹ Meets University General Education Requirement.
¹ To be chosen from Mathematics 113 or 117, 123, 125, 141, 142, 151, or 152.
² This requirement is met by taking two courses from: Astronomy 161 or 217, 162 or 218; Biology 101, 102, 111, 112, 130, 140, 157; Chemistry 100, 110, 120 or 128, 130 or 138; Geography 131, 132; Geology 101 or 107, 102 or 108, 103.
³ Two courses from the Arts and Humanities (AH) University General Education list.
⁴ To be chosen from the Social Sciences (SS) University General Education list.
⁵ Completion of one sequence. History 241-242 is the preferred sequence.
⁶ Six hours of foreign language (same language) at the intermediate level.
⁸ Three courses, two of which (6 hours) must be 400-level courses, and no more than one of which (3 hours) may be a 200-level course. Students who complete Communication Studies 210 may not count Communication Studies 240 toward the major. Students who complete Communication Studies 240 may not count Communication Studies.
210 toward the major. Communication Studies 445 may not be counted toward the major. A total of no more than 3 hours each of Communication Studies 491 and 493 may be counted toward the major.

9 Three courses (9 hours) from advertising, information sciences, journalism and electronic media, or public relations. These courses must come from at least two different areas of study.

10 Four courses (12 hours) to be taken from the following academic disciplines – Africana studies, American studies, anthropology, art history, cinema studies, classics, economics, English, French, geography, German, history, Italian, musicology, philosophy, political science, psychology, religious studies, Russian, sociology, Spanish, theatre, and women’s studies. Six hours of these courses must be at the 300 or 400 level.

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 3.50, 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://www.cci.utk.edu/commstudies.

Upon acceptance into the program, students are required to complete the following.

- Communication Studies 407 (9 hours to include three of the following 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 3.50 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>
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</table>

<table>
<thead>
<tr>
<th>Required Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication Studies 201 or 207</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Electives</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<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/

Edwin M. Cortez, Director

Professors

<table>
<thead>
<tr>
<th>Name</th>
<th>Department</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bilal, D., PhD</td>
<td>Florida State</td>
</tr>
<tr>
<td>Cortez, E.M., PhD</td>
<td>Southern California</td>
</tr>
<tr>
<td>Pemberton, J.M., PhD</td>
<td>Tennessee</td>
</tr>
<tr>
<td>Tenopir, C., PhD</td>
<td>Illinois</td>
</tr>
</tbody>
</table>

Associate Professors

<table>
<thead>
<tr>
<th>Name</th>
<th>Department</th>
</tr>
</thead>
<tbody>
<tr>
<td>Robinson, W.C., PhD</td>
<td>Illinois</td>
</tr>
<tr>
<td>Wang, P., PhD</td>
<td>Maryland</td>
</tr>
<tr>
<td>Whitney, G., PhD</td>
<td>Michigan</td>
</tr>
</tbody>
</table>

Assistant Professors

<table>
<thead>
<tr>
<th>Name</th>
<th>Department</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allard, S.L., PhD</td>
<td>Kentucky</td>
</tr>
<tr>
<td>Black, K., PhD</td>
<td>Florida State</td>
</tr>
<tr>
<td>Mehrz, B., PhD</td>
<td>Illinois</td>
</tr>
<tr>
<td>Normore, L., PhD</td>
<td>Ohio State</td>
</tr>
</tbody>
</table>

Established in 1971, the School of Information Sciences provides an interdisciplinary undergraduate minor in information studies and technology and a graduate program for the preparation of librarians and other information professionals for work in all types of information environments.

Minor in Information Studies and Technology

The minor in information studies and technology will complement majors in many fields, including liberal arts and sciences, engineering, applied life sciences, commerce, business administration, education and human ecology. Students electing the minor will learn about the impact of information and information technology on society, individuals, and organizations. They will acquire information and technology literacy skills enabling them to know how and where to find information, how to use it strategically, and how to design information containers and access systems in a variety of settings. Students will also learn how policies governing access and control of information resources are set and how policies affect organizations, individuals and society as a whole. Other aspects of information and information use that will be addressed in the minor include, but are not limited to, the ethical use of information; intellectual property rights; plagiarism; privacy vs. the right to know; the equity of access to information.

Students interested in the minor are encouraged to contact the School of Information Sciences’ undergraduate faculty coordinator for guidance and more information.

Requirements for the minor in information studies and technology are as follows.

Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication and Information 150</td>
<td>3</td>
</tr>
<tr>
<td>Information Sciences 102</td>
<td>3</td>
</tr>
<tr>
<td>Information Sciences 310</td>
<td>3</td>
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</table>

Electives

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information Studies courses at the 300-400 level chosen from 301, 330, 350, 351, 410, 450, 451, 460, 461, 470, and 495</td>
<td>9</td>
</tr>
</tbody>
</table>

Total 18

SCHOOL OF JOURNALISM AND ELECTRONIC MEDIA

http://www.cci.utk.edu/jem/

Peter Gross, Director

Professors

<table>
<thead>
<tr>
<th>Name</th>
<th>Department</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ashdown, P.G., PhD</td>
<td>Bowling Green</td>
</tr>
<tr>
<td>Bates, B.J., PhD</td>
<td>Michigan</td>
</tr>
<tr>
<td>Bowles, D., PhD</td>
<td>Wisconsin</td>
</tr>
<tr>
<td>Caudill, C.E., PhD</td>
<td>North Carolina</td>
</tr>
<tr>
<td>Cross, P., PhD</td>
<td>Iowa</td>
</tr>
<tr>
<td>Littmann, M. (Chair of Excellence), PhD</td>
<td>Northwestern</td>
</tr>
<tr>
<td>Moore, B.A., PhD</td>
<td>Ohio</td>
</tr>
<tr>
<td>Swan, N.R., PhD</td>
<td>Missouri</td>
</tr>
<tr>
<td>Teeter, Jr., D.L., PhD</td>
<td>Wisconsin</td>
</tr>
<tr>
<td>Wirth, M.O. (Dean), PhD</td>
<td>Michigan State</td>
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</table>

Associate Professors

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<tr>
<th>Name</th>
<th>Department</th>
</tr>
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<tbody>
<tr>
<td>Harmon, M., PhD</td>
<td>Ohio</td>
</tr>
<tr>
<td>Heller, R.B., MA</td>
<td>Syracuse</td>
</tr>
<tr>
<td>Keye, B., PhD</td>
<td>Florida State</td>
</tr>
<tr>
<td>Luther, C., PhD</td>
<td>Minnesota</td>
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</table>

Instructor

<table>
<thead>
<tr>
<th>Name</th>
<th>Department</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hufford, B.L., MEd</td>
<td>Bowling Green</td>
</tr>
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Emeritus Faculty

<table>
<thead>
<tr>
<th>Name</th>
<th>Department</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leiter, B.K., PhD</td>
<td>Southern Illinois</td>
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*End of text*
### JOURNALISM AND ELECTRONIC MEDIA MAJOR

**Requirements for the Bachelor of Science in Communication • Journalism and Electronic Media Major**

<table>
<thead>
<tr>
<th>Year</th>
<th>Course Details</th>
<th>Hours Credit</th>
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<tbody>
<tr>
<td>First Year</td>
<td>English 101*, 102*</td>
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<tr>
<td></td>
<td>Communication and Information 150</td>
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</tr>
<tr>
<td></td>
<td>Intermediate Foreign Language*</td>
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<tr>
<td></td>
<td>Psychology 110*</td>
<td>3</td>
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<tr>
<td></td>
<td>Natural Sciences Electives*</td>
<td>7-8</td>
</tr>
<tr>
<td></td>
<td>Quantitative Reasoning Electives*</td>
<td>6-8</td>
</tr>
<tr>
<td>Second Year</td>
<td>Journalism and Electronic Media 200*</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Journalism and Electronic Media 275</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Political Science 102*</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Economics 201*</td>
<td>4</td>
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<tr>
<td></td>
<td>Cultural Studies Electives*</td>
<td>6</td>
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<tr>
<td></td>
<td>Communication Studies 210* or 240*</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>English Literature Electives*</td>
<td>6</td>
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<td></td>
<td>Arts and Sciences Elective</td>
<td>3</td>
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<tr>
<td>Third Year</td>
<td>Journalism and Electronic Media 457 or 465</td>
<td>3</td>
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<tr>
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<td>Journalism and Electronic Media Track</td>
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<td></td>
<td>Journalism and Electronic Media Elective</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Political Science Elective</td>
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<td></td>
<td>Arts and Sciences Electives</td>
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<tr>
<td></td>
<td>General Electives</td>
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<tr>
<td>Fourth Year</td>
<td>Journalism and Electronic Media 400</td>
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<tr>
<td></td>
<td>Communication and Information Elective</td>
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<td></td>
<td>Journalism and Electronic Media 492</td>
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<td>Journalism and Electronic Media Track</td>
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<td></td>
<td>Journalism and Electronic Media Elective (Upper-Level)</td>
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<td>Arts and Sciences Electives</td>
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<tr>
<td></td>
<td>General Electives</td>
<td>3-6</td>
</tr>
</tbody>
</table>

* Meets University General Education Requirement.
1. Six hours of intermediate foreign language (same language).
2. This requirement is met by taking two courses from Anthropology 110 or 117; Astronomy 151 or 161 or 217, 152 or 162 or 218; Biology 101, 102, 111, 112, 130, 140, 157; Chemistry 100, 110, 120 or 128, 130 or 138; Geography 131, 132; Geology 101 or 107, 102 or 108, 103, 201, 202 or 208, 203, 205 or 207; Microbiology 210; Physics 101, 102. At least one of the courses must have a laboratory.
3. Two courses from Mathematics 113 or 117, 115, 123, 125, 141 or 147, 142 or 148, 151, 152.
4. Two courses from Africana Studies 235, 236; Anthropology 120; Asian Studies 101, 102; History 241, 242, 255, 256, 261, 262; Medieval Studies 201, 202.
5. English Literature Electives – English 201 or 207, 202 or 208, 206, 221, 222, 231 or 237, 232 or 238, 233, 235, 251, 252, 253, 254.
6. Any course from the College of Arts and Sciences not currently required.
7. Any four courses listed within one track.
14. Any journalism and electronic media course(s).
15. Political Science 315, 320, 321.
16. Any course not taught in advertising, journalism and electronic media, or public relations.
17. Any course within the College of Communication and Information (including journalism and electronic media courses).

### Minor in Journalism and Electronic Media

<table>
<thead>
<tr>
<th>Hours Credit</th>
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<tbody>
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<td>3-6</td>
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**Prerequisite to Minor**

<table>
<thead>
<tr>
<th>Course Details</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication and Information 150</td>
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**Required Courses**

<table>
<thead>
<tr>
<th>Course Details</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Journalism and Electronic Media 200</td>
<td>3</td>
</tr>
<tr>
<td>Journalism and Electronic Media 275 or 333</td>
<td>3</td>
</tr>
</tbody>
</table>

**Electives**

<table>
<thead>
<tr>
<th>Course Details</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Journalism and Electronic Media courses (6 credit hours must be at the 300-400 level)</td>
<td>9</td>
</tr>
</tbody>
</table>

Total 18

NOTE: At least 30 credit hours in courses numbered 300 or above must be completed.
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; Educational Psychology and Counseling; Instructional Technology, Health, and Cultural Studies; Nutrition; Exercise, Sport, and Leisure Studies; Retail, Hospitality, and Tourism Management; and Theory and Practice in Teacher Education.

Degrees and Majors

- Bachelor of Science in Education – art education major; special education major (concentrations in education of the deaf and hard of hearing, educational interpreting, modified and comprehensive special education); exercise science major; recreation and leisure studies major (concentrations in recreation and leisure administration, therapeutic recreation); and sport management major.

- Bachelor of Science in Health and Human Sciences – child and family studies major and nutrition major.

- Bachelor of Science in Service Management – hotel, restaurant, and tourism major and retail and consumer sciences major.

Minors

The academic departments within the College of Education, Health, and Human Sciences offer minors in adolescent health, child and family studies, community health education, dance, elementary education (for Arts and Sciences students only), engineering communication and performance (for engineering students only), gerontology (intercollegiate/interdisciplinary), middle grades education (for Arts and Sciences students only), nutrition, restaurant and foodservice management, retail and consumer sciences, secondary education (for Arts and Sciences students only), and 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.

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 2.00 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 2.30 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 2.40-2.70) 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).

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, concentra-
tions, and programs also require applicants to attain certain minimum performance levels on standardized aptitude or achievement tests and a favorable recommendation from an interview panel. Academic majors, concentrations, and programs involving teaching or other interaction with children require applicants to submit to security checks. Upon successful progression (i.e., admission) to a major, concentration, or program, students must meet additional criteria in order to maintain good standing and to graduate or complete a program.

Complete progression requirements for each major or concentration are located in the following sections of this catalog. Progression requirements for the Teacher Education Program appear in the section entitled, Teacher Education at the University of Tennessee, 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, located in the Jane and David Bailey Education Complex A332, 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 Director of Student Services or to the Director of Undergraduate Advising 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 3.00 GPA.

Students who are granted permission by the university’s Dean of the Graduate School 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 3.00 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.

Grading
Students enrolled in the College of Education, Health, and Human Sciences may take courses graded on a Satisfactory/No Credit (S/N) basis when letter grading (i.e., A-F) is not an option or in non-specified (i.e., free electives) courses. Additionally, students must earn at least a C in major prefix courses and in any other course so identified by the major area faculty (see departmental sections for specific progression requirements for each major).

General Education Test for Seniors
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.

Major Field Test for Seniors
The Tennessee Higher Education Commission (THEC) requires that each public institution for higher education 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.

Seniors Eligible for Graduate Credit
Students intending to enter certain graduate programs and teacher education students who are required to finish a post-baccalaureate (5th Year) before earning a teacher license may qualify as seniors to take graduate courses that may be applied to a master’s degree.

Subject to approval by the Dean of the Graduate School, 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 (3.00) 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.

- Only students working toward a first bachelor’s degree are eligible.
- Students who have met all requirements for graduation are not eligible for-privilege.
- Approval must be obtained each semester at the Graduate School, P-105 Andy Holt Tower; (865) 974-2475. Form available online at: http://gradstudies.tennessee.edu.
- A maximum of 9 hours of graduate credit at the 400- and 500-level can be obtained in this status.
- Some departments do not permit seniors to register for graduate courses without prior permission.
- Courses taken for graduate credit may not be used toward both the baccalaureate and a graduate degree program except in the case of approved dual bachelor’s/master’s programs.

Teacher Education at the University of Tennessee, Knoxville
The College of Education, Health, and Human Sciences is the administrative base for the university’s preparation programs for educators. As such the college has oversight responsibilities for licensure 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 formally admitted to the Teacher Education Program. Admission to Teacher Education offers a student to enroll in upper-division professional education courses. Admission requirements include, but are not limited to the following:

1. Academic achievement – minimum 2.70 cumulative GPA including transfer courses.
2. Minimum number of hours completed and required courses for Admissions Board Interviews:
(a) 45 credit hours for agriculture education, art education, music education, and special education; 60 credit hours for elementary education, and preK-K; 75 credit hours secondary education; and 90 credit hours early childhood education.

(b) completion of specific courses prior to admission to the following teaching areas: 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 3.00 GPA; and early childhood education – Child and Family Studies 350 and be currently enrolled in Child and Family Studies 351.

3. 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 score requirements).

4. Speech and hearing screening – prospective teachers 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. Hearing impaired applicants are exempt from this screening, but must inform the college’s Office of Teacher Education Admissions of their impairment before an Admissions Board interview can be scheduled.

5. Tennessee state law (TCA 49-5-5610) requires that students wishing to enter an approved higher education education preparation program must submit to a criminal history background check. Admission to the program is dependent on clearance of any conviction(s) as referenced to a list of crimes that would prohibit a person from being licensed in Tennessee.

Boards of Admission in Teacher Education
Applicants who meet the above criteria will be invited by the Office of Teacher Education Admissions to interview with a Board of Admissions. Admission decisions will be based on the above admission criteria, as well as each applicant’s written application, oral expression, appropriate experience working with children and youth, and expressed interest in teaching. Admission decisions are based on a comprehensive review of candidates’ credentials, and results from the Admissions Board interviews. Admissions decisions are made by faculty who are responsible for the application review process and who sit on Admissions Boards.

Admission is competitive and certain teaching fields have more qualified applicants than space available. 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. All licensure programs have received State of Tennessee approval, and must comply with state licensing requirements. Prospective applicants should request appointments with teacher licensure academic advisors to thoroughly discuss licensure program requirements. Appointments may be made by calling the Office of Student Services at 865-974-8194.

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 2.70 cumulative GPA, establish and maintain a minimum 2.50 GPA in their major, and maintain a minimum 2.80 GPA (course grade C or higher required) in professional education courses.

Complete information on the teacher licensure program is available through the College of Education, Health, and Human Sciences’ web site (http://cehhs.utk.edu/main.html), the college’s Office of Student Services – Claxton Complex, A332, or from teaching area faculty.

University-Wide Involvement in Teacher Education
The faculty in the College of Education, Health, and Human Sciences assume primary responsibility for preparing school personnel. The College of Arts and Sciences faculty have major responsibility for providing the general education background required of all teachers and for providing the specialized content knowledge needed by teachers.

Information regarding specific teaching fields and educational specialties is available at the following campus locations:
- Agriculture Education – 325 Morgan Hall
- Art Education – 213 Art and Architecture Building
- Music Education – 211 Music Building
- School Counseling – A525 Claxton Complex
- School Psychology – A525 Claxton Complex
- Audiology and Speech Pathology – 578 South Stadium Hall

College of Social Work – 308 Henson Hall

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 2005-2006 Academic Year: The University of Tennessee 98%; State of Tennessee 97%.

DEPARTMENT OF CHILD AND FAMILY STUDIES
http://cfs.he.utk.edu
Vey M. Nordquist, Head

Professors
Barber, B., PhD ...................................... Brigham Young
Blanton, P., EdD ...................................... Tennessee
Cunningham, J., PhD .................................... Michigan
Fox, G., PhD ............................................ Tennessee
Nordquist, V., PhD ...................................... Kansas
Twardosz, S., PhD ...................................... Michigan

Associate Professors
Brandon, D., PhD ...................................... Tennessee
Malia, J.A., PhD ...................................... Purdue
Moran, M., PhD ....................................... New Hampshire
Smith, D., PhD .......................................... Oklahoma State

Assistant Professors
Devereaux, M., PhD ...................................... Tennessee
Fouts, H., PhD .......................................... Washington State
Hallam, R., PhD ......................................... Delaware
Stolz, H., PhD .......................................... Brigham Young
Tu, H., PhD .............................................. Purdue

ECE Internship Coordinators
Justice, D., MS .......................................... Tennessee
Stott, A., MS ............................................ Tennessee

Director/Clincial Associate Professor
Durham, R.S., PhD ................................... Louisiana State

Clinical Assistant Professors
Fitzgerald, K., PhD ......................................... Tennessee
Malia, J.E., PhD .......................................... Iowa State

The Department of Child and Family Studies prepares students to be effective family members as well as competent professionals with the knowledge and skills to help children, youth, and families face the difficult challenges of today’s complex society. As a professional, a graduate of the department understands the variety of contexts that impact children and families. Students are particularly prepared to work with children, youth, and families at risk, and to be sensitive to the many forms of diversity that characterize today’s families.
Students in the department complete an integrated curriculum that includes human and child development, family dynamics and interaction patterns, research skills, and interpersonal and professional skills needed in the workplace. The major course of study concludes with a field-based experience that enables students to hone practical skills and knowledge in a work setting consistent with their personal and professional goals. Core coursework is complemented with a range of elective options that will give students a broad, general education as well as specialized knowledge in areas of their choosing.

Graduates of the department are prepared to work with individuals and groups from diverse backgrounds and in diverse settings – in schools as early childhood educators, with agencies providing services to children and families, and with for-profit businesses. Many students continue their education with graduate study in a number of different fields (e.g., child and family studies, education, counseling, psychology, ministry, social work, law).

**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 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 wishing to emphasize one 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.

Students electing to pursue the early development and learning (PreK-K) or the early childhood education teacher licensure preparation (PreK-3) specialty areas will take a total of 34 credit hours in this specialty area plus an additional 3 credit hours from their advanced social science electives.

**Progression Requirements**

Students are expected to know the criteria they must meet in order to progress into a practicum (Child and Family Studies 470, 472, 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**

- Apply for the practicum by completing 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 all prerequisites enforced by the registration system.
- A cumulative GPA of at least 2.50 (A cumulative GPA of at least 2.70, including transfer credits, is required for students electing the Child and Family Studies 472 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 five courses from the Family Life Education specialty area – Child and Family Studies 240, 345, 360, 440, and Counselor Education 480. 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 Development and Learning (PreK-K)**

The child and family studies major provides the undergraduate preparation needed for a student who would like to be licensed to teach early development and learning (PreK-K) in the State of Tennessee. This licensure program prepares students to teach children with and without disabilities, birth through age 6. Students who wish to pursue this licensure must complete the early development and learning (PreK-K) specialty area and complete the CFS 472 practicum. Upon completion of 60 undergraduate hours, including completion of Child and Family Studies 350, students will complete the admission process to the early development and learning (PreK-K) licensure program. Students interested in this licensure should work closely with their advisor to ensure that they understand and meet teacher education program requirements and that they strictly follow the application process.

**Early Childhood Education Teacher Licensure (PreK-3)**

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 (PreK-3). 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 (PreK-3) specialty area and the CFS 470 practicum 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 Health and Human Sciences • Child and Family Studies Major**

<table>
<thead>
<tr>
<th>First Year</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Child and Family Studies 101</td>
<td>2</td>
</tr>
<tr>
<td>English 101, 102</td>
<td>6</td>
</tr>
<tr>
<td>1Natural Sciences Electives</td>
<td>7</td>
</tr>
<tr>
<td>2Arts and Humanities Electives</td>
<td>6</td>
</tr>
<tr>
<td>3Quantitative Reasoning</td>
<td>6</td>
</tr>
</tbody>
</table>
### Second Year
- Child and Family Studies 211 .................................................. 3
- Child and Family Studies 220 .................................................. 3
- History Elective ........................................................................ 3
- Foreign Language Electives* .................................................. 6
- Psychology/Sociology Electives ................................................. 6
- Social Sciences Elective* .......................................................... 6
- Specialty Area Electives ............................................................ 6
- Elective ..................................................................................... 3

### Third Year
- Child and Family Studies 213 .................................................. 3
- Child and Family Studies 320 .................................................. 3
- Child and Family Studies 385 .................................................. 3
- Child and Family Studies 395 .................................................. 3
- Specialty Area Electives ............................................................ 15
- Advanced Social Sciences Electives ........................................ 6

### Fourth Year
- Child and Family Studies 405* ............................................... 3
- Child and Family Studies 470, 472, 480, or 490 ......................... 12
- Specialty Area Electives ............................................................ 6
- Advanced Social Sciences Electives ........................................ 6
- Electives .................................................................................. 3

**Total 125**

* Meets University General Education Requirement.
1. Select two courses from the Natural Science list – University General Education Requirement. At least one of the courses must have a laboratory.
2. Select two courses from the Arts and Humanities list – University General Education Requirement.
3. Select one mathematics and one statistics course from the Quantitative Reasoning list – University General Education Requirement.
4. Select any history-prefix course.
5. A sequence of a modern foreign language at the 200 level or above must be selected. Select a sequence from the list of intermediate foreign language sequences in the Cultures and Civilizations list – University General Education Requirement.
6. Select two of the following – Psychology 110, 210, 220; Sociology 110, 120.
7. Select any course from the Social Sciences list – University General Education Requirement. Child and Family Studies 210 and 220 and the courses used to meet the Psychology/Sociology Elective requirement may not be used.
8. Students must complete a total of 3 specialty areas of 9 credit hours each for a total of 27 credit hours. Students wishing to emphasize one 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. Check the Undergraduate Catalog for any prerequisites required for these courses. Students electing to pursue the specialty areas for early development and learning (PreK-K) teacher licensure or early childhood education teacher licensure preparation (PreK-3) will take a total of 34 credit hours in this specialty area plus an additional 3 credit hours from their advanced social science electives.
9. At least 54 hours in 300-400 level courses are required.
10. A total of 12 hours selected from 300-400 level child and family studies courses or 300-400 level sociology, history, psychology, political science, anthropology, educational psychology, counselor education, or recreation and leisure studies courses. Teacher licensure students must take Child and Family Studies 353 to fulfill 3 of the required hours.
11. Meets Communicating through Writing (WC) and Communicating Orally (OC) requirements.
12. Students pursuing the Early Development and Learning (PreK-K) licensure must complete the CFS 472 practicum and those pursuing the early childhood education (PreK-3) licensure must take the CFS 470 practicum. Child and Family Studies 470, 480 and 490 require a cumulative GPA of 2.50 (2.70 for Child and Family Studies 472, including transfer credits); completion of all prerequisites enforced by the registration system; a minimum grade of C in all child and family studies courses; completed application; student conduct and criminal background clearance. Child and Family Studies 470, 472, and 480 must be completed in one semester. Child and Family Studies 490 may be completed over several semesters.

### Specialty Areas
Specialty electives are grouped into specialty areas. Students must complete a total of three specialty areas of 9 credit hours each. Students wishing to emphasize one 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. Check the Undergraduate Catalog for any prerequisites required for these courses. Students electing to pursue the specialty areas for early development and learning (PreK-K) teacher licensure or early childhood education teacher licensure preparation (PreK-3) will take a total of 34 credit hours in this specialty area plus an additional 3 credit hours from their advanced social science electives.

### Adulthood and Aging
- Child and Family Studies 312; Health 406, 465; Nursing 400.

### Advanced Child Development
- Audiology and Speech Pathology 320; Child and Family Studies 211, 213, 485; Education of the Deaf and Hard of Hearing 425; Educational Psychology 431; Psychology 310, 320, 360, 400, 470, 475; Sociology 370; Special Education 470.

### Advanced Research
- Anthropology 431; Child and Family Studies 481; Psychology 295, 385, 395; Sociology 331; Statistics 201, 251, 320, 330, 471, 472, 473.

### Child and Family Diversity
- Africana Studies 201, 202, 429, 473, 480, 483; Anthropology 130, 312, 410, 413; Sociology 340, 343.

### Child and Family Studies Skills – Interpersonal Communication
- Communication Studies 220, 310, 320, 350, 420, 430.

### Child and Family Studies Skills – Public Policy
- Political Science 311, 312, 340, 446; Public Relations 270; Women's Studies 340.

### Child and Family Studies Skills – Working with Children
- Audiology and Speech Pathology 320; Art Education 301; Child and Family Studies 350, 351; Elementary Education 445; Educational Interpreting 223, 226; Information Sciences 330.

### Child and Family Studies Skills – Writing and Mass Media
- English 360, 455; Journalism and Electronic Media 200, 201, 414.

### Children 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.

### Early Development and Learning (PreK-K) (all courses are required)
- Audiology and Speech Pathology 320; Child and Family Studies 106, 350, 353, 423; Educational Psychology 401; Special Education 410, 471; Instructional Technology 486; Special Education 402.

### Early Childhood Education Teacher Licensure (PreK-3) (all courses are required)
- Child and Family Studies 106, 350, 351, 353, 422; Educational Psychology 401; Elementary Education 445; Information Sciences 330; Instructional Technology 486; Reading Education 430; Special Education 402.

### Family and Community Services
- Communication Studies 210, 440; Counselor Education 410; Educational Psychology 460; Political Science 446; Psychology 424; Social Work 200, 250; Sociology 110.

### Family Life Education
- Agricultural and Extension Education 211; Child and Family Studies 240, 360, 345, 440; Communication Studies 330; Counselor Education 480; Educational Psychology 210; Health 426; Philosophy 244; Psychology 409.
DEPARTMENT OF EDUCATIONAL PSYCHOLOGY AND COUNSELING

R. Steve McCallum, Head
Tricia McClam, Associate Head

Professors
Bogue, E.G., EdD ........................................ ..........Memphis State
Brockett, R., PhD .................................................Syracuse
George, T. (Associate Dean), EdD ..................................Tennessee
Greenberg, K., PhD ......................................................George Peabody
Huck, S., PhD ..............................................................Northwestern
Kronick, R., PhD .......................................................Tennessee
McCallum, R.S., PhD .................................................Georgia
McClam, T., PhD ......................................................South Carolina
Mertz, N., EdD ..............................................................Columbia
Peters, J., EdD ...............................................................North Carolina State
Skinner, C., PhD ...............................................................Lehigh
Studer, J., EdD ...............................................................Toledo
Williams, R., PhD .......................................................Georgia Peabody
Woodside, M., EdD ......................................................Virginia Tech

Associate Professors
Bair, S., PhD ....................................................Southern Mississippi
Cochran, J., PhD ......................................................Virginia Tech
Diambra, J., EdD ......................................................William & Mary
Dunn, P., PhD ..............................................................Ohio State
Skinner, A., PhD ...............................................................Mississippi State
Ziegler, M., EdD ..............................................................Columbia

Assistant Professors
Gibbons, M., PhD .................................................North Carolina (Greensboro)
Paulus, T., PhD ......................................................Indiana
Skolits, G., EdD ...................................................East Tennessee State
Spurgeon, S., PhD ......................................................North Carolina (Greensboro)
Strayhorn, T.L. (Special Assistant to the Provost), PhD .............................................Virginia Tech

Research Professor
Mulkey, S., PhD .......................................................Florida State

Research Assistant Professor
Rawlins, L.A., PhD .....................................................Tennessee

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

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Counselor Education 206</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Counselor Education 306</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Counselor Education 406</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Two of the following courses – Psychology 360, Management 440</td>
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<td>6</td>
</tr>
<tr>
<td>Communication Studies 420, 440</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total 15

DEPARTMENT OF EXERCISE, SPORT, AND LEISURE STUDIES

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

Joy T. DeSensi, Head

Professors
Bassett, Jr., D.R., PhD ..............................................Wisconsin
DeSensi, J.T., EdD ....................................................North Carolina (Greensboro)
Hayes, G.A., PhD ....................................................North Texas State
Thompson, D., PhD ...................................................Virginia
Wrisberg, C.A., PhD ......................................................Michigan

Associate Professors
Fisher, L.A., PhD .......................................................California (Berkeley)
Hardin, R.L., PhD ......................................................Tennessee
Hums, M., PhD .........................................................Ohio State
Zhang, S., PhD .........................................................Oregon

Assistant Professors
Andrew, D., PhD ......................................................Florida State
Bemiller, J., JD .......................................................Tennessee
Coe, D., PhD ..............................................................Michigan State
Dzikus, L., PhD .......................................................Ohio State
Fairbrother, J., PhD ......................................................Florida State
FilizHugh, E., PhD ......................................................Alabama
Klein, D., PhD .........................................................Arizona State
Koo, G., PhD ..............................................................Florida State
McCutchens, M.G., EdD .................................................North Carolina (Greensboro)
Milner, C.E., PhD .......................................................Leeds (UK)
Waller, S.N., PhD ..............................................................Michigan State

Clinical Assistant Professor
Polite, F., PhD .........................................................Florida State

EXERCISE SCIENCE MAJOR

Progression Requirements

Admission into the exercise science major requires a minimum undergraduate cumulative GPA of 2.50 after a minimum of 45 hours of coursework and completion of Exercise Science 100, Chemistry 120, and Physics 221.

Students must be admitted to the exercise science major prior to the completion of 75 hours of coursework. Only in exceptional circumstances will students be admitted to the major if more than 75 hours of college coursework have been completed, either at the University of Tennessee or elsewhere. Applications to the exercise science major can be obtained by visiting HPER 322. Once the application is complete and all requirements are met, students will be scheduled for a transcript evaluation with an exercise science faculty member.

Any professional courses, taken before or after progression into the exercise science program, must be passed with a minimum 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.

Students admitted into the exercise science major must maintain a minimum cumulative GPA of 2.50 thereafter to remain in good academic standing and to register for all 400-level exercise science courses. Students with less than a 2.50 GPA for two consecutive semesters will be dropped from the program.
Requirements for the Bachelor of Science in Education • Exercise Science Major

<table>
<thead>
<tr>
<th>First Year</th>
<th>Hours Credit</th>
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<tbody>
<tr>
<td>Exercise Science 100</td>
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</tr>
<tr>
<td>English 101*, 102*</td>
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</tr>
<tr>
<td>Mathematics 123* and 125* or 141* - 142* or 151* - 152*</td>
<td>6-8</td>
</tr>
<tr>
<td>Chemistry 120*, 130*</td>
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<tr>
<td>Psychology 110*</td>
<td>3</td>
</tr>
<tr>
<td>General Elective</td>
<td>3</td>
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<tr>
<td>Arts and Humanities Elective*</td>
<td>3</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>12</strong></td>
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Proficiency in two activities

Second Year

<table>
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<tr>
<th>Hours Credit</th>
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<tbody>
<tr>
<td>Physics 221*, 222*</td>
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<tr>
<td>Biochemistry and Cellular and Molecular Biology 230</td>
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<tr>
<td>Nutrition 100*</td>
</tr>
<tr>
<td>Health 310</td>
</tr>
<tr>
<td>Communication Studies 210* or 240*</td>
</tr>
<tr>
<td>English 295* or 360*</td>
</tr>
<tr>
<td>Cultures and Civilizations Elective*</td>
</tr>
<tr>
<td>Arts and Humanities Elective*</td>
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<tr>
<td><strong>Total</strong></td>
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</table>

Proficiency in two activities

Third Year

<table>
<thead>
<tr>
<th>Hours Credit</th>
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</thead>
<tbody>
<tr>
<td>Exercise Science 325, 332, 350</td>
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<tr>
<td>Sport Studies 290</td>
</tr>
<tr>
<td>Sport Studies 231, 335, or 336</td>
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<tr>
<td>Cultures and Civilizations Elective*</td>
</tr>
<tr>
<td>Social Science Elective*</td>
</tr>
<tr>
<td>Exercise Science Elective</td>
</tr>
<tr>
<td>Exercise Science 260</td>
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<td><strong>Total</strong></td>
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Professional Electives

Fourth Year

<table>
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<tr>
<th>Hours Credit</th>
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<tbody>
<tr>
<td>Exercise Science 414, 422, 480</td>
</tr>
<tr>
<td>Statistics 201* or Mathematics 115*</td>
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<tr>
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</table>

General Electives

Electives

CPR Certification

* Meets University General Education Requirement.
1 Proficiency 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 for appropriate courses.
2 Professional elective courses passed with a minimum grade of C. See advisor for appropriate courses.
3 Exercise science students must have cumulative minimum GPA of 2.50 to register for and complete these courses.
4 See advisor for requirements for general electives.
5 Evidence of current CPR certification at time of graduation.

Recreation and Leisure Studies Major

The professional disciplines that comprise recreation and leisure studies prepare students for management and administrative positions in recreation and leisure. 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, 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 the 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 2.50 GPA is required for progression to and retention in the program.

Progression Requirements

Students must submit an application upon meeting the following minimum requirements:

- Completion of a minimum of 30 semester hours.
- Maintain a minimum of 2.50 GPA for all college work.
- Completion of Recreation and Leisure Studies 100 and 201 with a grade of C or better.

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)

<table>
<thead>
<tr>
<th>First Year</th>
<th>Hours Credit</th>
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<tbody>
<tr>
<td>English 101, 102*</td>
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<tr>
<td>Mathematics 125 or 141*</td>
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<tr>
<td>Cultures and Civilizations*</td>
<td>6</td>
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<td>Arts and Humanities*</td>
<td>6</td>
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<tr>
<td>Recreation and Leisure Studies 201</td>
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<tr>
<td>Recreation and Leisure Studies 100</td>
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<tr>
<td>Communication Studies 210 or 240</td>
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<td><strong>12</strong></td>
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Second Year

<table>
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<tr>
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<tbody>
<tr>
<td>Accounting 200</td>
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<tr>
<td>Economics 201*</td>
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<tr>
<td>Recreation and Leisure Studies 320</td>
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<tr>
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<td>Natural Science Electives*</td>
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Third Year

<table>
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<tbody>
<tr>
<td>Recreation &amp; Leisure Studies 310, 415</td>
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<tr>
<td>Sport Management 450, 370; Recreation and Leisure Studies 440, 470</td>
</tr>
<tr>
<td>Recreation and Leisure Studies 390</td>
</tr>
<tr>
<td>Marketing 300</td>
</tr>
<tr>
<td>Finance 301</td>
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<tr>
<td>Management 300</td>
</tr>
<tr>
<td>One of the following: Safety 443; Forestry 321, 423; Political Science 330, 340; Hotel and Restaurant Administration 425</td>
</tr>
<tr>
<td><strong>Total</strong></td>
</tr>
</tbody>
</table>

Fourth Year

<table>
<thead>
<tr>
<th>Hours Credit</th>
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</thead>
<tbody>
<tr>
<td>Social Science Elective*</td>
</tr>
<tr>
<td>Recreation and Leisure Studies 410, 430</td>
</tr>
<tr>
<td>Electives</td>
</tr>
<tr>
<td>Recreation &amp; Leisure Studies 490</td>
</tr>
<tr>
<td><strong>Total</strong></td>
</tr>
</tbody>
</table>

* Meets University General Education Requirement.
1 Students must meet the University General Education Requirement for Communicating through Writing by selecting a course with a (WC) designation.
2 Recreation and Leisure Studies 290 and 390 are for majors only and are required prior to enrolling in senior internship.
3 A 2.50 GPA is required for enrollment in Recreation and Leisure Studies 310 and 490.
4 Courses must be in addition to those specified for the major.
5 Must meet guidelines set by Recreation and Leisure Studies. Senior standing required for Recreation and Leisure Studies 490.

Note: A minimum of 48 upper-division hours are required for graduation.


**Progression Requirements**

Students must submit an application upon meeting the following minimum criteria.

- Minimum of 30 semester hours earned.
- Minimum 2.50 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.

**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.

**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 2.50 to remain in good academic standing. Any sport management course taken before or after progression into the sport management program must be passed with a minimum grade of C. 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 in Education**

**• Recreation and Leisure Studies Major • Therapeutic Recreation Concentration (Accredited in General Recreation by NRPA/AALR)**

<table>
<thead>
<tr>
<th>First Year</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>English 101* , 102*</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Quantitative Reasoning*</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Chemistry 100* and 110* or 120* and 130*</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Child and Family Studies 210*</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Recreation and Leisure Studies 201*</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Psychology 110*</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Recreation and Leisure Studies 100</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

**Second Year**

| | Hours | Credit |
| Classics 273 | 3 |  |
| Biochemistry and Cellular and Molecular Biology 230 | 5 |  |
| Communication Studies 210* or 240* | 3 |  |
| Health 310 | 3 |  |
| Recreation and Leisure Studies 290 | 2 |  |
| Recreation and Leisure Studies 320, 325 | 6 |  |
| Philosophy 246* | 3 |  |
| Arts and Humanities* | 6 |  |

**Third Year**

| | Hours | Credit |
| Exercise Science 332 or Ecology and Evolutionary Biology 240 | 3-4 |  |
| Psychology 330 | 3 |  |
| Professional Support Course Electives | 3 |  |
| Arts and Humanities* | 6 |  |
| Recreation and Leisure Studies 310, 425 | 6 |  |
| Recreation and Leisure Studies 390 | 2 |  |
| Sport Studies 290 | 3 |  |
| Electives | 3 |  |
| Any 400-level course from recreation and leisure studies, psychology, health, sociology, special education, exercise science | 3 |  |

**Fourth Year**

| | Hours | Credit |
| Psychology (400 level) | 3 |  |
| Recreation and Leisure Studies 410, 420, 430 | 9 |  |
| Recreation and Leisure Studies 490 | 12 |  |
| Electives | 5 |  |

**Total 123-124**

* Meets University General Education Requirement.
1 Recreation and Leisure Studies 290 and 390 are for majors only and are required prior to enrolling in senior internship.
2 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, exercise science, sport studies.
3 A 2.50 GPA is required for enrollment in Recreation and Leisure Studies 310 and 490.
4 Must select one course from this group.
5 Must meet guidelines for national NCTRC certification.

NOTE: A 2.50 GPA is required for progression to the major. A minimum of 48 upper-division hours is required for graduation.

**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 2.50 to remain in good academic standing. Any sport management course taken before or after progression into the sport management program must be passed with a minimum grade of C. 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**

| First Year | Hours | Credit |
| English 101* , 102* | 6 |  |
| Business Administration 201 | 4 |  |
| Business Administration 201 | 4 |  |
| English 101*, 102* | 6 |  |
| Mathematics 125 or 141* | 3-4 |  |
| Natural Sciences Electives* | 7-8 |  |
| Recreation and Leisure Studies 201* | 6 |  |
| Recreation and Leisure Studies 250, 290* | 6 |  |
| Business Administration 201 | 4 |  |
| Statistics 201* | 3 |  |

**Second Year**

| | Hours | Credit |
| Accounting 200 | 3 |  |
| Economics 201* | 3 |  |
| Finance 301 | 3 |  |
| Marketing 300 | 3 |  |
| Sport Management 350*, 390* | 6 |  |
| Arts and Humanities Elective* | 3 |  |
| Sport Studies 335 | 3 |  |
| Communication through Writing Elective* | 3 |  |
| General Electives | 6 |  |

**Fourth Year**

| | Hours | Credit |
| Sport Management 490 | 1.2 |  |
| General Electives | 4 |  |

**Total 120-122**

* Meets University General Education Requirement.
1 Business administration minor requirement.
2 Requires progression into the sport management major.

**MINORS**

**Minor in Dance**

| Core Courses | Hours Credit |
| Dance 480 | 3 |
| Dance 490 | 3 |

**OPTION I: PERFORMANCE**

| Dance 480 | 3 |
| Dance 445 | 2 |
| Dance 410* | 1 |
| Select from Dance 310*, 320*, 330*, 340, 410**, 420**, 430** | 10 |
| Dance 440 | 2 |
OPTION II: PEDAGOGY
Dance 415 .................................................. 2
Dance 440 .................................................. 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.

Minor in Gerontology
(Intercollegiate/Interdisciplinary)
An intercollegiate/interdisciplinary undergraduate gerontology minor is coordinated through the Interdisciplinary Gerontology Colloquy Group members from the College of Education, Health, and Human Sciences; the College of Nursing; and the College of Social Work. Courses from these colleges are available under the gerontology minor.

Required Courses

<table>
<thead>
<tr>
<th>Course Description</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>9 hours from courses Child and Family Studies 312(3); Health 406(3); Health 465(3); Nursing 400(3); and other courses approved by the Interdisciplinary Gerontology Colloquy member coordinating the minor</td>
<td>9</td>
<td>3-4</td>
</tr>
</tbody>
</table>

Total 12-13

* Nursing students may use Nursing 461(4) to satisfy this requirement.

DEPARTMENT OF INSTRUCTIONAL TECHNOLOGY, HEALTH, AND CULTURAL STUDIES

http://ithcs.utk.edu
http://hes.utk.edu
Barbara Thayer-Bacon, Interim Head

Professors
Counts, E., EdD ........................................ Texas A&M
Gorski, J., DrPH ......................................... California (Los Angeles)
Hamilton, C., DrPH .................................... Oklahoma
Petty, G., PhD .......................................... Missouri
Thayer-Bacon, B., PhD ................................. Indiana
Waugh, M., EdD ......................................... Georgia

Associate Professors
O’Bannon, B., EdD ................................. Memphis
Smith, S., EdD ........................................ Tennessee

Assistant Professors
Anders, A., PhD ....................................... North Carolina
Bates, D.R., PhD ........................................ Texas Woman’s
Moyer, D., PhD ......................................... Ohio State
Pfaffman, J., PhD ...................................... Vanderbilt

Minor in Adolescent Health

Required Courses

<table>
<thead>
<tr>
<th>Course Description</th>
<th>Hours</th>
<th>Credit</th>
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</thead>
<tbody>
<tr>
<td>Health 305 (required)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Select 9 hours from Health 310, 405, 406, 420, 430, 435; Nutrition 100, 300; Safety 443; Child and Family Studies 213</td>
<td>9</td>
<td></td>
</tr>
</tbody>
</table>

Total 12

Minor in Community Health Education

Required Courses

<table>
<thead>
<tr>
<th>Course Description</th>
<th>Hours</th>
<th>Credit</th>
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<tbody>
<tr>
<td>Health 306</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Select 3 hours from Health 300 or 330</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Select 9 hours from Health 375, 400, 404, 425, 426, 430, or 420</td>
<td>9</td>
<td></td>
</tr>
</tbody>
</table>

Total 15

DEPARTMENT OF NUTRITION
http://nutrition.utk.edu

Jay Whelan, Head

Professors
Burney, J., PhD ........................................ Tennessee
Erwin, P.C., MD ........................................ Alabama (Birmingham)
MPH .................................................... Johns Hopkins
Greer, B., PhD ........................................ Tennessee
Haughton, B., EdD ...................................... Columbia
Karlstad, M., PhD ..................................... Loyola
Whelan, J., PhD ....................................... Penn State
Zemel, M., PhD ......................................... Wisconsin

Associate Professor
Kim, J., PhD ........................................... Tennessee

Assistant Professors
Bitte, J., PhD ........................................... Tennessee
Chen, G., PhD ......................................... University of Texas Southwestern Medical Center (Dallas)
Hansen-Petrik, M., PhD ................................. Tennessee
Jahns, L., PhD ......................................... North Carolina
Kavanagh-Prochaska, K., PhD ......................... California
Raynor, H., PhD ....................................... State University of New York (Buffalo)
Spence, M., PhD ....................................... Tennessee

Lecturer
Wehle, K., MS ........................................ Boston

Emeritus Faculty
Sachan, D., PhD ........................................ Illinois
Skinner, J., PhD ....................................... Oregon State

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 serve 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 provides 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 Bachelor of Science in Health and Human Sciences with a major in nutrition is currently granted approval status by the Commission of Accreditation/Approval for Dietetic Education of the American Dietetic Association, 120 S Riverside Plaza, Chicago, Illinois 60606-6995, (312) 899-0040, url http://www.eatright.org/cade. 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.

Requirements for the Bachelor of Science in Health and Human Sciences • Nutrition Major

First Year

<table>
<thead>
<tr>
<th>Course</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>Mathematics 119* and 125*</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>Psychology 110*</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Nutrition 100*</td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

Second Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>English 101*, 102*</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>Mathematics 119* and 125*</td>
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<td>6</td>
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<tr>
<td>Psychology 110*</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Nutrition 100*</td>
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</table>

Third Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Credit</th>
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</thead>
<tbody>
<tr>
<td>Accounting 200</td>
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<td>Electives</td>
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<td>5</td>
</tr>
<tr>
<td>Mathematics 125*</td>
<td></td>
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</tr>
<tr>
<td>Arts and Humanities Elective*</td>
<td></td>
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<tr>
<td>Nutrition 310, 313, 314</td>
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<td>10</td>
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<tr>
<td>Communication Studies 240*</td>
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<td>3</td>
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<tr>
<td>Microbiology and Cellular and Molecular Biology 230</td>
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<td>5</td>
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<tr>
<td>Electives</td>
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<td>7</td>
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Fourth Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electives</td>
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</tr>
<tr>
<td>Hotel, Restaurant and Tourism 341</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Classics 273</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Arts and Humanities Elective*</td>
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<td>3</td>
</tr>
<tr>
<td>Nutrition 303, 410, 412*, 415, 416, 420</td>
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<td>17</td>
</tr>
</tbody>
</table>

Total 120

* Meets University General Education Requirement.

Minor in Nutrition

<table>
<thead>
<tr>
<th>Course</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>
</tbody>
</table>

Total 16

NOTE: All course prerequisites are required. A student must earn a grade of C or better in each course to successfully complete the requirements for this minor.

DEPARTMENT OF RETAIL, HOSPITALITY, AND TOURISM MANAGEMENT

http://rhtm.utk.edu

Nancy J. Rutherford, Head

Professors

Costello, C., PhD .................................. Tennessee
Fairhurst, A., PhD .................................. Oklahoma State
Kim, Y., PhD ..................................... North Carolina
Rutherford, N., PhD ................................ North Carolina State

Associate Professors

Chen, R., PhD ..................................... North Carolina State
Morse, Steve, PhD .................................. Tennessee
Wise, D., PhD .................................... Texas A&M

Assistant Professors

Antun, J., PhD .................................... South Carolina
Costen, W., PhD .................................. Washington State
Lim, H., PhD ..................................... Purdue

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 Retail, Hospitality, and Tourism 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 major focuses on meeting the mid- 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 major requires 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 the major after completing at least three of the following Hotel, Restaurant, and Tourism 210, 211, 212, and 224 and prior to entering Hotel, Restaurant, and Tourism 390. Applications for progression are available in the departmental office.

For progression into the major, students must meet the following criteria:

• Cumulative grade point average 2.30 or greater for at least 30 semester hours completed.
• Grade of C or better in all hotel, restaurant, and tourism prefix courses.
• Successful completion of English 101, 102, and Mathematics 125.
• Complete 300 post-secondary school hours of industry related work for the chosen major. A complete list of appropriate work experiences is available in the departmental office.

For graduation, students must earn a grade of C or better in all hotel, restaurant, and tourism courses.

Requirements for the Bachelor of Science in Service Management • Hotel, Restaurant, and Tourism Major

First Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>English 101*, 102*</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>Natural Sciences Elective*</td>
<td></td>
<td>7-8</td>
</tr>
<tr>
<td>Mathematics 119 or 123* and 125*</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>Arts and Humanities Elective*</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Culture and Civilizations Elective*</td>
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</table>

Second Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accounting 200</td>
<td>3</td>
</tr>
<tr>
<td>Statistics 201*</td>
<td>3</td>
</tr>
<tr>
<td>Economics 201*</td>
<td>4</td>
</tr>
<tr>
<td>Social Sciences Elective*</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hotel, Restaurant, and Tourism 210</td>
<td>3</td>
</tr>
<tr>
<td>Hotel, Restaurant, and Tourism 211</td>
<td>3</td>
</tr>
</tbody>
</table>
For progression into the major, students must meet the following criteria:

- Cumulative grade point average 2.30 or greater with a minimum of 30 semester hours completed.
- Grade of C or better in all retail and consumer sciences 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 courses.

**Requirements for the Bachelor of Science in Service Management • Retail and Consumer Sciences Major**

<table>
<thead>
<tr>
<th>Year</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Year</td>
<td></td>
<td></td>
</tr>
<tr>
<td>English 101, 102*</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>Natural Sciences Electives*</td>
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<td>7-8</td>
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<tr>
<td>Mathematics 119 or 123*, and 125*</td>
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<td>6</td>
</tr>
<tr>
<td>Arts and Humanities Electives*</td>
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<td>6</td>
</tr>
<tr>
<td>Cultures and Civilizations Elective*</td>
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<td>3</td>
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<td>Total 121-122</td>
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</table>

**Second Year**

<table>
<thead>
<tr>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>English 201*</td>
<td>4</td>
</tr>
<tr>
<td>Social Sciences Elective*</td>
<td>3</td>
</tr>
<tr>
<td>Accounting 200</td>
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</tr>
<tr>
<td>Business Administration 201</td>
<td>4</td>
</tr>
<tr>
<td>Retail and Consumer Sciences 210, 341</td>
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<tr>
<td>Elective</td>
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</tr>
<tr>
<td>Total 121-122</td>
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</table>

**Third Year**

<table>
<thead>
<tr>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marketing 300</td>
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</tr>
<tr>
<td>Management 300</td>
<td>3</td>
</tr>
<tr>
<td>Communication Studies 240*</td>
<td>3</td>
</tr>
<tr>
<td>Retail and Consumer Sciences 310, 311, 346, 376, 390*</td>
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</tr>
<tr>
<td>Retail and Consumer Sciences 422</td>
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</tr>
<tr>
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**Fourth Year**

<table>
<thead>
<tr>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finance 301</td>
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</tr>
<tr>
<td>Retail and Consumer Sciences 360</td>
<td>3</td>
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<tr>
<td>Retail and Consumer Sciences 410</td>
<td>3</td>
</tr>
<tr>
<td>Retail and Consumer Sciences 415 or 421</td>
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<td>Retail and Consumer Sciences Electives</td>
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<tr>
<td>Electives</td>
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<tr>
<td>Total 121-122</td>
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</table>

* Meets University General Education Requirement.

1 Select 12 hours from 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**

<table>
<thead>
<tr>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retail and Consumer Sciences 210, 341</td>
<td>6</td>
</tr>
<tr>
<td>Select 3 from Retail and Consumer Sciences 310, 346, 376, 412, 415, 421, 480</td>
<td>9</td>
</tr>
<tr>
<td>Total 15</td>
<td></td>
</tr>
</tbody>
</table>

* Meets University General Education Requirement.

1 Select 12 hours from 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.

**MINORS**

**Minor in Restaurant and Foodservice Management**

<table>
<thead>
<tr>
<th>Required Courses</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hotel, Restaurant and Tourism 101, 210, 311, 326, 341, 445</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>Total 15</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Minor in Tourism and Hospitality Management**

<table>
<thead>
<tr>
<th>Required Courses</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hotel, Restaurant and Tourism 210, 211, 224</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Select two from Hotel, Restaurant, and Tourism 311, 423, 435, 450</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Total 15</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**RETAIL AND CONSUMER SCIENCES MAJOR**

Through a combination of classroom instruction and field-based experience, students prepare for entry-level positions in diverse occupations and for advanced education. The retail and consumer sciences 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, and prior to entering Retail and Consumer Sciences 390. Applications for progression are available in the department office.
DEPARTMENT OF THEORY AND PRACTICE IN TEACHER EDUCATION

Susan M. Benner, Head

Professors
Allington, R., PhD ................................................. Michigan State
Benner, S., EdD ..................................................... Columbia
Brewer, E., EdD ................................................... Tennessee
Davis-Wiley, P., EdD ............................................. Houston
Hatch, J., PhD ...................................................... Florida
Long, V. (Associate Dean), EdD ...................... Missouri
McGillivray, P., EdD .............................................. State University of New York (Albany)
Rider, R., (Dean), PhD ........................................ North Carolina
Rowell, C., EdD .................................................. George Peabody
Turner, T., EdD .................................................... Penn State
Ubben, G., PhD .......................................................... Minnesota

Associate Professors
Anfara, V., PhD .................................................. New Orleans
Barclay-McLaughlin, M., PhD ....................... Michigan
Bell, S., PhD ............................................................ Tennessee
Cagle, L., (Associate Dean), EdD ................. Georgia
Davis, J., PhD ...................................................... New Mexico
Girlane, C., PhD ..................................................... Illinois
Melear, C., PhD ................................................... Ohio State

Assistant Professors
Angelle, P., PhD ................................................ Louisiana State
Botsakis, S., PhD ................................................ Georgia
Broemmel, A., PhD ............................................ Southern Illinois
Brown, C., EdD ..................................................... George Washington
Cad, J., PhD ............................................................. Illinois State
Cihak, D., PhD ........................................................... Georgia
Groenke, S., PhD ................................................. Virginia Tech
Hagevick, R., PhD .............................................. North Carolina State
Hendricks, D., PhD ............................................. Alabama
Hodge, L., PhD ...................................................... Vanderbilt
Patterson, F., EdD .................................................. Tennessee
Rearden, K., PhD ................................................ Texas A&M
Stairs, A., PhD .................................................... Boston College
Woolsey, L., PhD .................................................... Ohio State
Wooten, D., PhD ................................................... New York

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.

Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Art Education 301</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Art Education 302</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Art Education 303</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Art Education 350</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Educational Psychology 210</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Educational Psychology 401</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Special Education 402</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Instructional Technology 486</td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

Undergraduate Total 25

The following courses are taken during the post-baccalaureate professional year. Students must apply to and be admitted by the Office of Graduate and International Admissions prior to registration.

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education 574</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Education 575</td>
<td></td>
<td>12</td>
</tr>
<tr>
<td>Education 591</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Art Education 530</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Art Education 540</td>
<td></td>
<td>3</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.

SPECIAL EDUCATION MAJOR

Requirements for the Bachelor of Science in Education
• Special Education Major • Educational Interpreting Concentration

First Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>English 101*, 102*</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>Arts and Humanities Elective*</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Social Sciences Elective*</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>English Elective*</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>History*</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Physical Education Activity or Recreation Therapy Elective</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Elective</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Quantitative Reasoning Electives*</td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

Second Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication Studies 210* or 240*</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Communicating through Writing (WC)*</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Elective</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>History 241*, 242*</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>Arts and Humanities Elective*</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Social Sciences Elective*</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Educational Interpreting 223 and 226</td>
<td></td>
<td>6</td>
</tr>
</tbody>
</table>

Third Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instructional Technology 486</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Philosophy 340*</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Educational Psychology 210</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Psychology 300</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Educational Psychology 401</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Educational Interpreting 431, 432</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>Educational Interpreting 335</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Educational Interpreting 340</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Educational Interpreting 350</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Educational Interpreting 355</td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

Fourth Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Art Education 435</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Educational Interpreting 440</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Total 121-122</td>
<td></td>
<td>6</td>
</tr>
</tbody>
</table>

* Meets University General Education Requirement.

NOTE: Progression to the educational interpreting concentration requires a 2.70 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 2.70 while in the program. Students with less than a 2.70 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 • Education of the Deaf and Hard of Hearing Concentration

First Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>English 101*, 102*</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>Arts and Humanities Elective*</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Anthropology 130*</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Cultures and Civilizations Electives*</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Natural Sciences Elective*</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Physical Education Activity or Recreation Therapy Elective</td>
<td></td>
<td>2-3</td>
</tr>
<tr>
<td>Mathematics 113*-115* or 123*-125*</td>
<td></td>
<td>6</td>
</tr>
</tbody>
</table>

Second Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication Studies 210* or 240*</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Literature Elective</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Educational Interpreting 223</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Psychology Elective</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>General Elective</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Biological Science Elective</td>
<td></td>
<td>4</td>
</tr>
</tbody>
</table>

* Meets University General Education Requirement.
<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education 574</td>
<td>2</td>
</tr>
<tr>
<td>Education 575</td>
<td>3</td>
</tr>
<tr>
<td>Education 591</td>
<td>4</td>
</tr>
<tr>
<td>Education of the Deaf/Hard of Hearing 528, 529</td>
<td>6</td>
</tr>
</tbody>
</table>

**Graduate Total 24**

1. A physical or biological science course to complete science sequence.
2. Any course with a (WC) designation satisfies this requirement.

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

- **Special Education Major**
- **Modified and Comprehensive Special Education Concentration (with Optional Endorsements in Early Childhood Special Education and Elementary Education)**

**First Year**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>English 101, 102</td>
<td>3</td>
</tr>
<tr>
<td>Anthropology 130</td>
<td>3</td>
</tr>
<tr>
<td>Quantitative Reasoning Elective*</td>
<td>3</td>
</tr>
<tr>
<td>Psychology 110</td>
<td>3</td>
</tr>
<tr>
<td>Sociology Elective</td>
<td>3</td>
</tr>
<tr>
<td>Political Science Elective</td>
<td>3</td>
</tr>
<tr>
<td>Physical Science Elective</td>
<td>3</td>
</tr>
</tbody>
</table>

**Second Year**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Philosophy 246* (AH) (WC)</td>
<td>3</td>
</tr>
<tr>
<td>Communication 210* or 240* or Communicating Orally (OC)</td>
<td>3</td>
</tr>
<tr>
<td>General Education Elective</td>
<td>3</td>
</tr>
<tr>
<td>Educational Psychology 210</td>
<td>3</td>
</tr>
<tr>
<td>Non-US History</td>
<td>6</td>
</tr>
<tr>
<td>Geography Elective</td>
<td>3</td>
</tr>
<tr>
<td>Biological Science Elective*</td>
<td>3</td>
</tr>
<tr>
<td>Foreign Language</td>
<td>6</td>
</tr>
</tbody>
</table>

**Third Year**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts and Humanities*</td>
<td>3</td>
</tr>
<tr>
<td>Economics Elective</td>
<td>3</td>
</tr>
<tr>
<td>Child and Family Studies 211</td>
<td>3</td>
</tr>
<tr>
<td>Information Science 330</td>
<td>3</td>
</tr>
<tr>
<td>Audiology and Speech Pathology 320</td>
<td>3</td>
</tr>
<tr>
<td>Recreation and Leisure Studies 425</td>
<td>3</td>
</tr>
<tr>
<td>Educational Psychology 401</td>
<td>3</td>
</tr>
<tr>
<td>Elementary Education 422</td>
<td>6</td>
</tr>
<tr>
<td>Reading Education 430</td>
<td>2</td>
</tr>
<tr>
<td>Special Education 410</td>
<td>3</td>
</tr>
</tbody>
</table>

**Fourth Year**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Special Education 402</td>
<td>3</td>
</tr>
<tr>
<td>Special Education 419</td>
<td>6</td>
</tr>
<tr>
<td>Special Education 420</td>
<td>3</td>
</tr>
</tbody>
</table>

**Modifications**

- **Education (K-12)**
- **Elementary Education Option (K-6)**
- **Early Childhood Special Education Option** (requires additional 9 hours)

**Graduate Total 24**

1. Students must meet the University General Education Requirement.
2. Any course with a (WC) designation satisfies this requirement.
3. Intermediate-level competence.

**Teaching Minors**

**Minor in Elementary Education**

Students interested in becoming elementary school teachers (K-grade 6) 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 complete a minor in elementary education.

**Required Courses**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Educational Psychology 210</td>
<td>3</td>
</tr>
<tr>
<td>Information Sciences 330</td>
<td>3</td>
</tr>
<tr>
<td>Reading Education 430</td>
<td>2</td>
</tr>
<tr>
<td>Instructional Technology 486</td>
<td>3</td>
</tr>
<tr>
<td>Educational Psychology 401</td>
<td>3</td>
</tr>
<tr>
<td>Special Education 402</td>
<td>3</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. Students must apply to and be admitted by the Office of Graduate and International Admissions prior to registration.

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education 574</td>
<td>2</td>
</tr>
<tr>
<td>Education 575</td>
<td>12</td>
</tr>
<tr>
<td>Education 591</td>
<td>4</td>
</tr>
<tr>
<td>Elementary Education 505</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 English Language Learning**

Students interested in becoming PreK-12 English as a Second Language teachers typically earn a Bachelor of Arts degree in the College of Arts and Sciences with a major in English, linguistics, or a world language (e.g., Asian Studies, French, German, Spanish). As part of their degree, they should take English 477 or 372; English 471 (Sociolinguistics) is highly recommended. While completing requirements for the baccalaureate degree, students are encouraged to matriculate a minor in English language learning.

**Required Courses**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Educational Psychology 210</td>
<td>3</td>
</tr>
<tr>
<td>Theory and Practice in Teacher Education 203</td>
<td>1</td>
</tr>
<tr>
<td>Foreign Language/ESL Education 466</td>
<td>3</td>
</tr>
<tr>
<td>Foreign Language/ESL Education 476</td>
<td>3</td>
</tr>
<tr>
<td>Educational Psychology 401</td>
<td>3</td>
</tr>
<tr>
<td>Special Education 402</td>
<td>3</td>
</tr>
<tr>
<td>Instructional Technology 486</td>
<td>3</td>
</tr>
</tbody>
</table>

**Undergraduate Total 19**

The following courses are taken during the post-baccalaureate professional year. Students must apply to and be admitted by the Graduate School prior to registration.

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education 574</td>
<td>2</td>
</tr>
<tr>
<td>Education 575</td>
<td>12</td>
</tr>
<tr>
<td>Education 591</td>
<td>4</td>
</tr>
<tr>
<td>Elementary Education 504</td>
<td>3</td>
</tr>
<tr>
<td>Foreign Language/ESL Education 588</td>
<td>3</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 (Grades 7-12) 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 complete a minor in secondary education.

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Educational Psychology 210</td>
<td>3</td>
</tr>
<tr>
<td>Theory and Practice in Teacher Education 352</td>
<td>1</td>
</tr>
<tr>
<td>Theory and Practice in Teacher Education 355</td>
<td>3</td>
</tr>
<tr>
<td>Educational Psychology 401</td>
<td>3</td>
</tr>
<tr>
<td>Special Education 402</td>
<td>3</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. Students must apply to and be admitted by the Office of Graduate and International Admissions prior to registration.

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education 574</td>
<td>2</td>
</tr>
<tr>
<td>Education 575</td>
<td>12</td>
</tr>
<tr>
<td>Education 591</td>
<td>4</td>
</tr>
<tr>
<td>Specialty Studies (Choose from Social Science Education 454, Foreign Language/ESL Education 454, English Education 459, Mathematics Education 485, Science Education 495)</td>
<td>3</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.
College of Engineering

Way Kuo, Dean and University Distinguished Professor
Wayne T. Davis, Associate Dean for Research and Technology
Alberto Garcia, Associate Dean for Academic Affairs
Masood Parang, Associate Dean for Student Affairs
Luther R. Wilhelm, Associate Dean for Special Projects
Walter N. Odom, Director, Engineering Office of Professional Practice
J. Roger Parsons, Director, Engineering Fundamentals Division
James T. Pippin, Director, Engineering Diversity Program
Margaret Russell, Director, Engineering Advising Services

http://www.engr.utk.edu/coe/undergraduate/new_index.html

Engineers solve problems. To do so, they apply science, mathematics, and creativity to invent, design, test, build and operate engineering systems that will meet the needs of society. In the latter half of the 20th century, engineers developed the personal computer, the space shuttle, artificial hearts, and many other “high-tech” products. The opportunities to use technology for the benefit of 21st century society will be even greater.

Engineers use the same problem-solving strategies whether designing a bridge, trouble shooting a computer chip problem, or developing a more efficient automobile engine. This commonality of approach makes it easy for an engineer to move from one specialization to another. The engineer’s can-do, problem solving outlook is also good preparation for management, and many engineers follow this career path.

Increasingly, engineers must also have good interpersonal skills to work effectively in the interdisciplinary groups required to tackle modern engineering projects. They must understand the ethical, environmental, social, political, and business implications of their work. Engineers must work comfortably among the cultures, customs, and languages of multi-national enterprises.

In light of modern society’s ever-increasing dependence on technology, there is a continuing and urgent need for engineering graduates who possess the high levels of technical competence and social understanding that will enable them to fulfill their responsibilities as professional engineers. The College of Engineering prepares men and women to face these challenges and to seize opportunities to become the technology leaders of the 21st century.

Graduates of the Bachelor of Science curricula offered 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’s goal is to increase significantly the number of qualified minority engineering graduates. This program is maintained in the Office of Professional Practice.

College Admission Requirements

The College of Engineering has established admissions criteria for incoming freshmen based on several performance criteria, including completion of core academic subjects, GPA scores on these subjects and standardized test (SAT or ACT) scores. In addition to these requirements, a Success Prediction Indicator (SPI) number is used for admission to the College of Engineering. The SPI is calculated by adding an individual’s ACT mathematics score to 10 times their core high school GPA (based on a 4.0 scale). For information on what constitutes core high school courses, please consult admission website http://admissions.utk.edu/undergraduate/apply/requirements.shtml.

The following table indicates the minimum required SPI for the corresponding academic year:

<table>
<thead>
<tr>
<th>Academic Year</th>
<th>Minimum SPI</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008-09</td>
<td>58</td>
</tr>
<tr>
<td>2009-10</td>
<td>59</td>
</tr>
<tr>
<td>2010-11</td>
<td>60</td>
</tr>
</tbody>
</table>

SPI EXAMPLE: A student with a high school core GPA of 3.5 and an ACT mathematics score of 28 would have an SPI of 63 using the formula \((3.5 \times 10) + 28 = 63\). SAT scores are converted to an equivalent ACT score to perform this calculation.

Students who wish to pursue a degree in the College of Engineering 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.
Facilities
Most of the college’s facilities are on the southeastern corner of “The Hill.” Administration and Civil and Environmental 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, Aerospace, Biomedical, Chemical, and Materials Science are in Dougherty Hall. The Engineering Fundamentals Division, Engineering Advising Services, and Engineering Diversity Programs offices are located in Estabrook Hall. The Office of Professional Practice is in Perkins Hall. The Engineering Physics program is administered through the Physics Department in the Nielsen Physics Building.

Advising Services
http://www.engr.utk.edu/advising/

Engineering Advising Services provides excellent academic program planning services to undergraduate students in the College of Engineering, with specific attention given to the freshman class. Central to the mission of academic advising at the university is teaching students to understand the purpose of the curriculum and fostering their 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.

The College of Engineering is committed to the belief that academic advising engages students by teaching them how to become members of the higher education community, to think critically about their role and responsibilities as engineers, and to prepare them to be educated members of a global community. The students' learning outcomes of academic advising in the college are to craft a coherent educational plan based on assessment of abilities and interests; use a variety of campus resources to set goals, reach decisions, and achieve those goals; assume responsibility for meeting academic program requirements; cultivate the intellectual habits that lead to a life-time of learning; and behave as citizens who engage in the wider world around them. The Advising Services Office is located in 202 Estabrook Hall. The office can be reached by phone at (865) 974-4008.

New freshman students are assigned to Engineering Advising Services for academic advising 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. Upon completion of Engineering Fundamentals 152 (or equivalent), the students are assigned faculty advisors in their selected departments.

First-Year Courses for Honors Concentrations
(For Computer Science, see listing in Department of Electrical Engineering And Computer Science section)

Beginning students who wish to pursue an honors concentration in one of the engineering majors will normally be part of the Chancellor’s Honors Program. Requirements for first-year coursework duplicate those of the Chancellor’s Honors Program. Coursework requirements in the upper division are specific to the individual departments and the student is referred to those individual descriptions for explanation.

Specifically, first-year requirements are:

- English 118, under the same conditions as stated in the requirements for the Chancellor’s Honors Program.
- University Honors 100.
- One 200-level University Honors seminar to be completed during the second semester of the freshman year.
- Four additional 100- or 200-level honors courses. For engineering students, these would normally be Engineering Fundamentals 157, Engineering Fundamentals 158, and two courses chosen from Mathematics 147, 148, 247 or Chemistry 128, 138.

Other courses may be approved by the individual engineering departments upon entry to their honors concentration.

Office of Professional Practice
www.coop.utk.edu

The University of Tennessee College of Engineering encourages all its students to obtain relevant paid work experience through the Office of Professional Practice. Engineering students can choose to participate in Cooperative (Co-op) Engineering or the College's Internship Program. Both offer qualified assignments that are an integral part of the educational process, as well as helps UT engineers identify skills, build networks, and foster relations in the engineering community.

Since 1926, UT engineers have blended classroom theory with practical engineering application in corporate or government settings. The Co-op Engineering Program is a study-work plan of education in which a student alternates periods of campus coursework with periods of employment in industry related to the student's major. As the second oldest Co-op Engineering Program in the south, most UT engineers work in assignments across the United States, however, more students are seeking opportunities internationally. Currently, over 40% of the undergraduate engineering students register and pursue one of the many positions available. One of the value added components is that all positions are paid. Salaries vary between organizations and locations. Most students are able to offset a substantial amount of college expenses with Co-op or Intern savings. We encourage our students to seek exposure that offers depth and skills development.

Professional staff will work in conjunction with advisors to outline academic-work plans (Degree Plan), and address scholarship issues to schedule cycles of full-time academic terms with alternating terms of work. The University of Tennessee believes that this process offers a “real world” understanding of after graduation expectations. It also affords each student feedback from the employer to help gauge areas of interest and career direction. An added incentive, many companies hire their Co-op students for full-time employment after graduation.

Internships through the Office of Professional Practice follow the same standard of quality, but tend to be just one term. Most internships are offered in the summers (10-13 weeks) and are very competitive; and just like Co-op Engineering assignments, are monitored by university professionals. Sound advising helps intern candidates pursue positions offered at times other than summers.

All students in the College of Engineering can participate and should begin reviewing these opportunities the first semester at UT. Because of changing economic trends, some engineering majors may be in greater demand and selection criteria will vary among organizations. The practice of engineering is an art, which is learned on the job site as well as in the classroom. Only those students completing at least 52 weeks of approved work experiences will receive the Program’s Cooperative Engineering Certificate. All students participating in internships and co-op engineering programs through the Office of Professional Practice must enroll in Engineering Fundamentals 333 (1) for each semester employed in a co-op or internship assignment.

Further details are available on our Web site or write to: Office of Professional Practice; 310 Perkins Hall; Knoxville, Tennessee 37996-2030.

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 Center for International Education, 1620 Melrose Avenue.

Graduate Program

Graduate programs leading to the Master of Science are offered in twelve majors – aerospace engineering, biomedical engineering, chemical engineering, civil engineering, electrical engineering, engineering science, environmental engineering, industrial engineering, materials science and engineering, mechanical engineering, nuclear engineering, and polymer engineering. The Doctor of Philosophy is offered in twelve majors – aerospace engineering, biomedical engineering, chemical engineering, civil engineering, computer science, electrical engineering, engineering science, industrial engineering, materials science and engineering, mechanical engineering, nuclear engineering, and polymer engineering. See the Graduate Catalog for information on these programs.

Tau Beta Pi National Headquarters

The college is honored to have the national headquarters of Tau Beta Pi, the Engineering Honor Society, housed on our campus since 1907. This honor was earned in part through the untried efforts of R.C. "Red" Matthews, 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, R.E. Hawks, Assistant Secretary-Treasurer, and eight additional staff members.

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, biomedical, biosystems, chemical, civil, computer, electrical, industrial, mechanical, materials science, and nuclear.

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 in the Office of the University Registrar. No unofficial minors will be recognized.

Designation of a Minor

An engineering undergraduate may declare a minor in an engineering or 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.
- 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 graduation if the minor is to appear on the final transcript. Graduation applications are available in the Office of the University Registrar.
Minor in Reliability and Maintainability Engineering

A coursework program leading to a minor in reliability and maintainability engineering is offered by the College of Engineering. Fifteen hours of coursework are required as listed below. The grade in each of the required courses must be at least a C. Students should consult with their advisor for the appropriate elective courses in their major.

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industrial Engineering 483 or Nuclear Engineering 483</td>
<td>6</td>
</tr>
<tr>
<td>Industrial Engineering 484 or Mechanical Engineering 484 or Nuclear Engineering 484</td>
<td>6</td>
</tr>
<tr>
<td>Statistics or Math Requirement (choose 1)</td>
<td>3</td>
</tr>
<tr>
<td>Chemical Engineering 301</td>
<td></td>
</tr>
<tr>
<td>Electrical and Computer Engineering 313</td>
<td></td>
</tr>
<tr>
<td>Mathematics 323</td>
<td></td>
</tr>
<tr>
<td>Statistics 251</td>
<td></td>
</tr>
<tr>
<td>Electives (choose at least 2)</td>
<td>6</td>
</tr>
<tr>
<td>Chemical Engineering 360</td>
<td></td>
</tr>
<tr>
<td>Electrical and Computer Engineering 315, 347</td>
<td></td>
</tr>
<tr>
<td>Industrial Engineering 300, 340</td>
<td></td>
</tr>
<tr>
<td>Statistics 365 (for non-Industrial Engineering)</td>
<td></td>
</tr>
<tr>
<td>Mechanical Engineering 345, 363</td>
<td></td>
</tr>
<tr>
<td>Nuclear Engineering 304</td>
<td></td>
</tr>
</tbody>
</table>

Total 15

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 (or designee) 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. Students can obtain the required paperwork to request an overload either in the Engineering Advising Services Office or on the College of Engineering Web site under the Advising Services section.

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, the departmental (major) office will update the student’s college and major within the university computer system.

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 conduct-
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 in order 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.

Probation and Dismissal Procedures
Academic Probation in Engineering
The university will review students having academic difficulty and on academic probation the week after final grades are posted. The university academic probation policy is stated in the Academic Policies and Procedures section of this catalog.

Dismissal from Engineering
Students dismissed from the College of Engineering and/or the University of Tennessee, Knoxville, will be removed from all courses if pre-registered for the following term. Dismissed students must follow university policies and procedures regarding academic dismissal and readmission as stated in the Academic Policies and Procedures and Admission to the University sections of this catalog. Dismissed students who are re-admitted will be University Undecided status and advised in the Arts and Sciences Advising Office. Dismissed students may no longer pursue a major in the College of Engineering.

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
Schleiter, 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 teach the principal courses in Engineering Fundamentals. These courses are designed to prepare students for entry into the sophomore year of every major 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 resources are offered as needed.

Minor in Engineering Communication and Performance
The division co-administers, with the College of Education, Health, and Human Sciences, 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
(See College of Agricultural Sciences and Natural Resources – Department of Biosystems Engineering and Soil Science)

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 Soil Science in the College of Agricultural Sciences and Natural Resources in cooperation with the College of Engineering.

DEPARTMENT OF CHEMICAL AND BIOMOLECULAR ENGINEERING
http://www.che.utk.edu/
Bamin Khomami, Head
Brian J. Edwards, Undergraduate Liaison
Professors
Bienkowski, P.R., PhD ........................................... . Purdue
Counce, R.M., PhD ............................................ . Tennessee
Khomami, B. (Armour T. Granger and Alvin & Sally Beamman Professor), PhD ........................................... . Illinois
Sheth, Atul C. (UTSI), PhD ........................................... . Northwestern

Associate Professors
Boder, E.T., PhD ............................................ . Illinois
Bruns, D.D., PhD ............................................. . Houston
Edwards, B.J., PhD ........................................... . Delaware
Frymier, P.D., PhD ............................................ . Virginia
Keffer, D.J., PhD ............................................. . Illinois
Petrovan, S. (Research), PhD ................................... . Iasi Tech (Romania)
Padisson, S.J., PhD ............................................ . Calgary (Canada)
Wang, T.W., PhD ............................................. . Massachusetts Institute of Technology

Adjunct Faculty
Collier, J.R., PhD ............................................. . Case Institute of Technology
Steele, W.V., PhD ............................................. . Queens (Belfast)

Emeriti Faculty
Holmes, J.M., PhD ............................................. . Tennessee
Moore, C.F., PhD, PE .................................................................................................................. . Louisiana State
Prados, J.W., PhD, PE ............................................. . Tennessee

Chemical and biomolecular engineering programs deal with the development, design, operation, and management of plants and processes for economical, safe conversion of chemical raw materials to useful products, such as pharmaceuticals, plastics, and specialty chemicals. It is a broadly based discipline with heavy emphasis on chemistry and mathematics, with supporting study in areas such as physics, materials science, and humanities.

Graduates of the Department of Chemical and Biomolecular Engineering at the University of Tennessee, Knoxville, possess the knowledge base, intellectual skills, and professional commitment which prepare them for innovative technical leadership, graduate study, productive service to society, and continued professional growth through lifelong learning. Preparation is based in the attainment of the 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 Department of Chemical and Biomolecular Engineering 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 Department of Chemical and Biomolecular Engineering who pursue full-time graduate or advanced professional study will complete their programs of study successfully.

• Graduates of the UT Knoxville Department of Chemical and Biomolecular Engineering will continue their professional growth through lifelong learning.

The curriculum provides a central core of required courses with the flexibility in the upper-division years to permit emphasis
on preparation for graduate school or professional employment, and to concentrate in either chemical or biomolecular tracks. To graduate from chemical and biomolecular engineering programs, students must complete the curriculum with a grade of C or better in all required chemical engineering courses, as well as meeting general university and college requirements.

A minimum of 18 hours of general education courses is required. These courses must meet the University General Education Requirement. A writing course (WC) and oral communication course (OC) must be included in the general education electives.

**Progression to Upper Division**

Progression of students in the Department of Chemical and Biomolecular Engineering to departmental courses numbered 310 and 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 must apply for progression to upper-division status after completing Chemical Engineering 201, 235, 240, and 250 with a grade of C or better in each course and an overall GPA of 2.30 or better.

**Provisional Status**

Students who have completed Chemical Engineering 201, 235, 240, and 250 with an overall GPA of at least 2.30 may apply for provisional status. The granting of provisional upper-division status is based on 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 2.10 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**

Upper-division level transfer students are admitted on a provisional status basis only.

### CHEMICAL ENGINEERING MAJOR

**Requirements for the Bachelor of Science in Chemical Engineering**

<table>
<thead>
<tr>
<th>First Year</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>English 101* or 118*, 102*</td>
<td>6</td>
</tr>
<tr>
<td>Mathematics 141* or 147*, 142* or 148*</td>
<td>8</td>
</tr>
<tr>
<td>Engineering Fundamentals 105, 151 or 157, 152 or 158</td>
<td>9</td>
</tr>
</tbody>
</table>

**Second Year**

| English 101* or 118*, 102* | 6 |
| Mathematics 200, 231, 241 or 247 | 8 |
| Engineering Fundamentals 230 | 2 |
| Biology 140* | 4 |
| General Education Elective (Social Science)* | 3 |

**Third Year**

| Chemical Engineering 301, 310*(WC), 340, 360, 380 | 13 |
| Chemistry 350 | 3 |
| General Education Electives (Arts and Humanities)* | 6 |
| Physics 231 | 3 |
| Biological Option I | 3 |
| Chemical Option I | 3 |
| Chemical Option III | 3 |

**Fourth Year**

| Chemical Engineering 401, 445, 450, 480, 488 or 490 | 13 |
| General Education Electives (Arts and Humanities)* | 3 |
| General Education Electives (Cultures and Civilizations, and Social Science)* | 3 |
| Technical Electives | 6 |

**Total 128**

* Meets University General Education Requirement.

1. Students must also meet the Oral Communication requirement through a course with an (OC) designation (for example, Philosophy 242 or Philosophy 244).

2. See departmental Web site for course listings.

### BIOMOLECULAR ENGINEERING CONCENTRATION

**Requirements for the Bachelor of Science in Chemical Engineering • Biomolecular Engineering Concentration**

<table>
<thead>
<tr>
<th>First Year</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>English 101* or 118*, 102*</td>
<td>6</td>
</tr>
<tr>
<td>Chemistry 120* or 128*, 130* or 138*</td>
<td>8</td>
</tr>
<tr>
<td>Mathematics 141* or 147*, 142* or 148*</td>
<td>8</td>
</tr>
<tr>
<td>Engineering Fundamentals 105, 151 or 157, 152 or 158</td>
<td>9</td>
</tr>
</tbody>
</table>

**Second Year**

| Chemical Engineering 201, 235, 240, 250 | 15 |
| Mathematics 200, 231, 241 or 247 | 8 |
| Engineering Fundamentals 230 | 2 |
| Biology 140* | 4 |
| General Education Elective (Social Science)* | 3 |

**Third Year**

| Chemical Engineering 301, 310*(WC), 340, 360, 380 | 13 |
| Engineering Fundamentals 350 | 3 |
| General Education Electives (Arts and Humanities)* | 6 |
| Physics 231* | 3 |
| Biology 240 | 4 |

**Fourth Year**

| Chemical Engineering 401, 445, 450, 475, 480, 488 or 490 | 16 |
| Biological Option I | 3 |
| General Education Electives (Arts and Humanities)* | 6 |
| Biochemistry and Cellular and Molecular Biology 401, 402 | 8 |

**Total 128**

* Meets University General Education Requirement.

1. Students must also meet the Oral Communication requirement through a course with an (OC) designation (for example, Philosophy 242 or Philosophy 244).

2. See departmental Web site for course listings.

### HONORS CONCENTRATIONS

The honors concentrations encourage highly motivated students to experience a more rigorous preparation in the Department of Chemical and Biomolecular Engineering. Admission is selective and students will normally be participating in the Chancellor’s Honors Program as well. Application to the honors concentrations is made when the student applies for upper-division status.

Candidates for the honors chemical engineering concentration and the honors biomolecular engineering concentration must complete the following requirements:

- First-year courses for honors concentrations in the engineering majors.
- Further requirements for the honors chemical engineering concentration and the honors biomolecular engineering concentration are as follows. Maintain an overall GPA of at least 3.30 and a GPA of at least 3.30 in departmental courses. Complete: Mathematics 247; Chemistry 483; Chemical Engineering 407, 447, and one of the following: Chemical Engineering 467, 477, 478, 488, 498. Complete a 3-hour senior design course. This requirement is satisfied by Chemical Engineering 488.
CIVIL ENGINEERING MAJOR
Requirements for the Bachelor of Science in Civil Engineering

First Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemistry 120* or 128*, 130* or 138*</td>
<td>8</td>
</tr>
<tr>
<td>English 101* or 118*, 102*</td>
<td>8</td>
</tr>
<tr>
<td>Engineering Fundamentals 105, 151 or 157, 152 or 158</td>
<td>9</td>
</tr>
<tr>
<td>Mathematics 141* or 147*, 142* or 148*</td>
<td>8</td>
</tr>
</tbody>
</table>

Second Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts and Humanities Elective*</td>
<td>3</td>
</tr>
<tr>
<td>Civil Engineering 205*, 210, 261</td>
<td>9</td>
</tr>
<tr>
<td>Cultures and Civilizations Elective*</td>
<td>3</td>
</tr>
<tr>
<td>Engineering Fundamentals 202</td>
<td>2</td>
</tr>
<tr>
<td>Mathematics 231, 241 or 247, 251 or 257</td>
<td>10</td>
</tr>
<tr>
<td>Physics 231*</td>
<td>3</td>
</tr>
<tr>
<td>Statistics 251</td>
<td>3</td>
</tr>
</tbody>
</table>

Third Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts and Humanities Elective*</td>
<td>3</td>
</tr>
<tr>
<td>Civil Engineering 305, 321, 330, 351, 352, 361, 380, 390, 416</td>
<td>27</td>
</tr>
<tr>
<td>Cultures and Civilizations Elective*</td>
<td>3</td>
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</table>

Fourth Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Civil Engineering 401, 435, 440, 442, 471, 480</td>
<td>16</td>
</tr>
<tr>
<td>Civil Engineering 400</td>
<td>3</td>
</tr>
<tr>
<td>Civil Engineering Elective</td>
<td>3</td>
</tr>
<tr>
<td>Civil Engineering/Technical Elective</td>
<td>3</td>
</tr>
<tr>
<td>Social Sciences Electives*</td>
<td>6</td>
</tr>
</tbody>
</table>

Total 128

* Meets University General Education Requirement.
All electives must be pre-approved by the advisor and the department head.

HONORS CONCENTRATION

Students who wish to pursue the honors civil engineering concentration will normally be part of the Chancellor's Honors Program. Candidates for the honors civil engineering concentration must complete the following requirements.

- First-year courses for honors concentrations in the engineering majors.
- Two upper-division honors courses in civil engineering via honors-by-contract or Civil Engineering 407. The contract must be submitted to the Chancellor's Honors Program for approval by the third week of the semester.

A minimum of 3-credit hours of an honors senior project course. This requirement may be satisfied by Civil Engineering 407 or by enrolling in the honors section of the senior capstone design course (Civil Engineering 400).

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 coursework 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 with a major in environmental engineering which builds on the minor.

Students are asked to file their intent to complete the minor with 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.

Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Civil Engineering 486</td>
<td>3</td>
</tr>
<tr>
<td>Microbiology 210</td>
<td>3</td>
</tr>
<tr>
<td>Select one from Chemistry 230, 310, or 350</td>
<td>3</td>
</tr>
<tr>
<td>Select two from Chemical Engineering 201, Biosystems Engineering 221, Civil Engineering 380, 416</td>
<td>6</td>
</tr>
<tr>
<td>Select one from Geology 202 or Philosophy 245</td>
<td>3</td>
</tr>
</tbody>
</table>
The DEPARTMENT OF ELECTRICAL ENGINEERING AND COMPUTER SCIENCE

http://www.eecs.utk.edu/

Kevin Tomsovic, Head
Leon Tolbert, Undergraduate Liaison

Professors
Abidi, M., PhD .............................................. Tennessee
Berry, M.W., PhD ........................................... Illinois
Birdwell, J.D., PhD ........................................... Massachusetts Institute of Technology
Bomar, B.W. (UTSI), PhD .................................... Tennessee
Dongarra, J.J., PhD ........................................... New Mexico
Gregor, J., PhD .............................................. Aalborg (Denmark)
Kuo, W. (Dean and University Distinguished Professor), PhD .............................................. Georgia Tech
Green, W.L., PhD .............................................. Texas A&M
Gonzalez, R.C., PhD ........................................... Florida

Emeriti Faculty
Lecturer
Wu, J., PhD .............................................. Notre Dame
Li, H., PhD .............................................. Princeton
Li, F., PhD, PE .............................................. Virginia Tech

Assistant Professors
Tolbert, L.M., PhD, PE ........................................... Georgia Tech
Smith, L.M. (UTSI), PhD ........................................ Tennessee
Qi, H., PhD .............................................. North Carolina State
Islam, S.K., PhD .............................................. Connecticut
Huang, J., PhD .............................................. Ohio State

Associate Professors
Banks, D.C., PhD .............................................. North Carolina
Beck, M., PhD .............................................. Cornell
Blalock, B.J., PhD .............................................. Georgia Tech
Crilly, P.B., PhD .............................................. New Mexico State
Fathy, A., PhD .............................................. Polytechnic Institute of New York
Huang, J., PhD .............................................. Ohio State
Islam, S.K., PhD .............................................. Connecticut
MacLennan, B.J., PhD ........................................... Purdue
Peterson, G.D., DSc .............................................. Washington (St. Louis)
Qi, H., PhD .............................................. North Carolina State
Smith, L.M. (UTSI), PhD ........................................ Tennessee
Tolbert, L.M., PhD, PE ........................................... Georgia Tech
Vose, M.D., PhD .............................................. Texas

Assistant Professors
Djouadi, S.M., PhD .............................................. McGill (Canada)
Elhanany, I., PhD .............................................. Ben-Gurion (Israel)
Farquhar, E.D., PhD .............................................. Georgia Tech
Straight, D.W., PhD .............................................. Texas
Li, F., PhD, PE .............................................. Virginia Tech
Li, H., PhD .............................................. Princeton
Wu, J., PhD .............................................. Notre Dame

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

Emeriti Faculty
Alexeff, I., PhD, PE .............................................. Wisconsin
Bouldin, D.W., PhD .............................................. Vanderbilt
Gonzalez, R.C., PhD .............................................. Florida
Green, W.L., PhD .............................................. Texas A&M
Pace, M.O., PhD .............................................. Georgia Tech
Roth, J.R., PhD .............................................. Cornell

The goals of the three Bachelor of Science programs, computer engineering, computer science, and electrical engineering, are to prepare students for entry into the profession; to instill in students the capabilities required by the discipline, the recognition of the need to enhance the discipline, and the desire for lifelong learning; and to 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 programs are based on a series of integrated courses. Students advance through a program in a sequential manner guided by prerequisite and co-requisite courses in the showcase curricula. These integrated sequentially-developed programs are highlighted by the systematic inclusion of the design process introduced in the second year.

Program Educational Objectives

- Will apply the knowledge of the fundamentals of engineering, science, and mathematics in the practice of computer engineering, computer science, and electrical engineering or in advanced professional studies; will identify, formulate and solve computer engineering, computer science, and electrical engineering problems.
- Will design, analyze, and implement complex devices and systems containing hardware and software components while considering a combination of economic, ethical, safety, environmental, and social issues; will be able to use modern engineering and scientific techniques, skills, and tools.
- Will communicate effectively, function on multi-disciplinary teams, and engage in lifelong learning.

Program Outcomes

In addition to the eleven program outcomes listed in the College of Engineering section on National Accreditation, outcomes also include knowledge of probability and statistics including applications, discrete math, and an understanding of advanced mathematics in the areas of differential equations, numerical analysis, linear algebra, and calculus. The computer engineering and electrical 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, 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 in Computer Engineering, the Bachelor of Science in Computer Science, and the Bachelor of Science in Electrical Engineering are structured to provide a foundation in both the basic sciences and the specialized areas of the respective disciplines. 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.

To be eligible for the Bachelor of Science degree, a student must earn at least 30 hours of upper-division courses in the Department of Electrical Engineering and Computer Science at the University of Tennessee, Knoxville.

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. 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 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, electric machines, and power electronics and drives. Multiple Linux and Windows computer laboratories are available to students within the department.

The department requires at least a C in every computer engineering, computer science, electrical engineering, and mathemat-
ics course used for the undergraduate degrees.

Progression of departmental undergraduate students 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 will be evaluated during the semester they are registered for it. Transfer students for whom Electrical and Computer Engineering 300 transfer credit is given may take 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 be put in either a temporary probationary status or a non-progressed status and will not be permitted to register for any upper division courses within the department.

HONORS CONCENTRATIONS

Students who wish to pursue the honors electrical engineering concentration, honors computer engineering concentration, and honors computer science concentration will normally be part of the Chancellor’s Honors Program.

Candidates for the honors electrical engineering concentration and honors computer engineering concentration must complete the first year courses for honors concentration in the engineering majors. Candidates for the honors computer science concentration must meet the first year requirements for the Chancellor’s Honors Program.

In addition to satisfying the requirements described above, candidates for these three honors concentrations must also satisfy the following requirements.

- Two upper-division honors courses in computer science or electrical and computer engineering via Honors-by-Contract or Honors Independent study, or equivalent. The contract or independent study must be submitted to the Chancellor’s Honors Program for approval by the third week of the semester.
- Complete a 3-credit hour senior project course. This can normally be completed as part of the capstone design course, Electrical and Computer Engineering 400 for computer engineering and electrical engineering majors or Computer Science 400 for computer science majors.

COMPUTER ENGINEERING MAJOR

Students in the senior year may choose from a wide spectrum of courses covering various aspects of computer engineering, computer science, electrical engineering, 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.

Requirements for the Bachelor of Science in Computer Engineering

<table>
<thead>
<tr>
<th>First Year</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>English 101* or 118*, 102*</td>
<td>6</td>
</tr>
<tr>
<td>Chemistry 120*</td>
<td>4</td>
</tr>
<tr>
<td>Math 141* or 147*, 142* or 148*</td>
<td>8</td>
</tr>
<tr>
<td>1Engineering Fundamentals 151 or 157, 152 or 158, 105</td>
<td>9</td>
</tr>
<tr>
<td>Electrical and Computer Engineering 206</td>
<td>4</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Second Year</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<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>Electrical and Computer Engineering 300</td>
<td>5</td>
</tr>
<tr>
<td>Computer Science 140</td>
<td>4</td>
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</table>

<table>
<thead>
<tr>
<th>Third Year</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electrical and Computer Engineering 315, 335</td>
<td>7</td>
</tr>
<tr>
<td>Computer Science 302, 360</td>
<td>8</td>
</tr>
<tr>
<td>Mathematics 300 or 307</td>
<td>3</td>
</tr>
<tr>
<td>Electrical and Computer Engineering 316, 342, 355, 395</td>
<td>10</td>
</tr>
<tr>
<td>2Philosophy 241*, 243*, or 244*</td>
<td>3</td>
</tr>
<tr>
<td>2Cultures and Civilizations Electives*</td>
<td>6</td>
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</table>

<table>
<thead>
<tr>
<th>Fourth Year</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electrical and Computer Engineering 451-453 or 451-455</td>
<td>6</td>
</tr>
<tr>
<td>Electrical and Computer Engineering 400*</td>
<td>5</td>
</tr>
<tr>
<td>3Computer Engineering Senior Electives</td>
<td>6</td>
</tr>
<tr>
<td>2Arts and Humanities Elective*</td>
<td>3</td>
</tr>
<tr>
<td>2Social Sciences Electives*</td>
<td>6</td>
</tr>
<tr>
<td>1Engineering Fundamentals 402</td>
<td>1</td>
</tr>
</tbody>
</table>

Total 128

* Meets University General Education Requirements.

1 Engineering Fundamentals 157 and 158 are honors versions of Engineering Fundamentals 151 and 152. Students in the Chancellor’s Honors Program are not required to take Engineering Fundamentals 402.

2 Can be taken at any time.

3 Must be in electrical or 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, 431, 432, 433, 441, 442, 443, 446, 453, 455, 471, 472, 481, and 482.

COMPUTER SCIENCE MAJOR

Students may choose from a wide spectrum of courses covering various aspects of computer science, computer engineering, 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 program with their advisors.

Requirements for the Bachelor of Science in Computer Science

<table>
<thead>
<tr>
<th>First Year</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Computer Science 102, 140</td>
<td>8</td>
</tr>
<tr>
<td>Mathematics 141* or 147*, 142* or 148*</td>
<td>8</td>
</tr>
<tr>
<td>Physics 135* or 137*, 136* or 138*</td>
<td>8-10</td>
</tr>
<tr>
<td>English 101* or 118*, 102*</td>
<td>6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Year</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Computer Science 160, 311, 302</td>
<td>11</td>
</tr>
<tr>
<td>Mathematics 241 or 247, 251 or 257, 300 or 307</td>
<td>10</td>
</tr>
<tr>
<td>Biology 101 or 130 or Chemistry 100 or 120 or Physics 231</td>
<td>3-4</td>
</tr>
<tr>
<td>2Philosophy 241, 242, 243, or 244*</td>
<td>3</td>
</tr>
<tr>
<td>1Oral Communications General Education Elective*</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Third Year</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Computer Science 360, 365, 380</td>
<td>11</td>
</tr>
<tr>
<td>Computer Science 340 or 370 or Math 371</td>
<td>3-4</td>
</tr>
<tr>
<td>Mathematics 323 or Electrical &amp; Computer Engineering 313</td>
<td>3</td>
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<tr>
<td>2Computer Science Upper Division Elective or Mathematics 231</td>
<td>3</td>
</tr>
<tr>
<td>1Cultures and Civilizations Electives*</td>
<td>6</td>
</tr>
<tr>
<td>1Social Science Elective*</td>
<td>3</td>
</tr>
<tr>
<td>3General Elective</td>
<td>2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fourth Year</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Computer Science 400</td>
<td>5</td>
</tr>
<tr>
<td>Computer Science Upper Division Electives</td>
<td>15</td>
</tr>
<tr>
<td>English 355* or 360*</td>
<td>3</td>
</tr>
<tr>
<td>2Arts and Humanities Elective*</td>
<td>3</td>
</tr>
<tr>
<td>1Social Science Elective*</td>
<td>3</td>
</tr>
</tbody>
</table>

Total 120-124

* Meets University General Education Requirements.

1 Can be taken anytime.

2 Mathematics 231 can be substituted for three hours of upper-division computer science electives.

3 Must be approved by advisor.

Minor In Computer Science

The College of Engineering offers a minor in computer science 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 24 credits in computer science courses. Some of the courses used in the minor may also satisfy requirements for the student's major. A grade of C or better is required in all computer science courses applied to the minor. The last 12 hours must be taken at the University of Tennessee, Knoxville. The minor is not open to computer engineering majors.

Students may enroll in the minor program by completing a form at the Electrical Engineering and Computer Science office. A copy of the completed enrollment form and information on the minor requirements will be forwarded to the student's home department advisor.

Required Courses

<table>
<thead>
<tr>
<th>Required Courses</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Electrical Engineering majors may substitute Electrical and Computer Engineering 206 for Computer Science 102 and Electrical and Computer Engineering 255 for Computer Science 160.</td>
<td>2</td>
</tr>
<tr>
<td>2 Mathematics 371 may be substituted for 3 hours.</td>
<td></td>
</tr>
</tbody>
</table>

**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. Students are encouraged to discuss an appropriate senior program with their advisors.

**Requirements for the Bachelor of Science in Electrical Engineering**

**First Year**

| English 101* or 118*, 102* | 6 |
| Chemistry 120* | 4 |
| Mathematics 141* or 147*, 142* or 148* | 8 |
| Engineering Fundamentals 151 or 157, 152 or 158, 105 | 9 |
| Electrical and Computer Engineering 206 | 4 |

**Second Year**

| Mathematics 200, 231, 241 | 8 |
| Physics 231*, 232* | 7 |
| Electrical and Computer Engineering 255, 313 | 7 |
| Electrical and Computer Engineering 300 | 5 |
| Philosophy 241*, 243*, or 244* | 3 |

**Third Year**

| Electrical and Computer Engineering 315, 325, 335, 341 | 14 |
| Electrical and Computer Engineering 316, 336, 342, 355, 395 | 13 |
| Social Sciences Electives* | 6 |

**Fourth Year**

| Electrical and Computer Engineering 400* | 5 |
| Electrical Engineering Senior Electives | 12 |
| Technical Electives | 6 |
| Arts and Humanities Elective* | 3 |
| Culture and Civilizations Electives* | 6 |
| Engineering Fundamentals 402 | 1 |

**Total 127**

* Meets University General Education Requirement.

1 Engineering Fundamentals 157 and 158 are honors versions of Engineering Fundamentals 151 and 152. Students in the Chancellor’s Honors Program are not required to take Engineering Fundamentals 402.

2 Can be taken at any time.


4 Chemistry 130: Industrial Engineering 405; Materials Science and Engineering 201, 410; Mechanical Engineering 231, 321, 331, 344, Nuclear Engineering 342.

**ENGINEERING PHYSICS PROGRAM**

Soren P. Sorensen, Director
Stuart B. Eleton, Coordinator

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**

**First Year**

| English 101* or 118*, 102* | 6 |
| Mathematics 141* or 147*, 142* or 148* | 8 |
| Engineering Fundamentals 105, 151 or 157, 152 or 158 | 9 |
| Chemistry 120* or 128*, 130* or 138* | 8 |

**Second Year**

| Mathematics 231, 241 or 247 | 8 |
| Computer Science 102 | 4 |
| Physics 135 or 136, 134 | 10 |
| Engineering/Technical Electives | 3 |
| Culture and Civilizations Electives* | 6 |

**Third Year**

| Physics 250, 321 | 7 |
| Physics 311, 312 | 6 |
| Physics 350 | 3 |
| Physics 421 | 4 |
| Engineering/Technical Electives | 6 |
| Social Science Electives* | 6 |

**Fourth Year**

| Physics 411, 412 | 6 |
| Physics 431, 432 | 6 |
| Physics 461 | 3 |
| Engineering/Technical Electives | 12 |
| Arts and Humanities Electives* | 6 |

**Total 126**
human beings as a major variable and the industrial engineer is typically concerned with the design of integrated systems and processes to produce and deliver goods and services not only in manufacturing, but also in the service fields of manufacturing, service, and government. There is increasing emphasis on the goal of improving quality and productivity. Industrial engineers work closely with the top management in these sectors to achieve this goal.

Industrial engineering graduates possess the knowledge, technical skills, and professionalism for their entry into industry or graduate study. They are prepared for life-long learning and for service to society. Many will achieve prominent roles in management.

Students majoring in industrial engineering are eligible to participate in the Engineering Cooperative Program and other student activities in the College of Engineering. Industrial engineering majors interested in the Engineering Cooperative 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 life-long learning.

This curriculum emphasizes the knowledge and skills necessary to design integrated systems of people, materials, equipment, and energy such that the overall systems function 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 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>First Year</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical 120* or 128*</td>
<td>.4</td>
</tr>
<tr>
<td>English 101* or 118*, 102*</td>
<td>.6</td>
</tr>
<tr>
<td>Mathematics 141* or 147*, 142* or 148*</td>
<td>.8</td>
</tr>
<tr>
<td>Engineering Fundamentals 105, 151 or 157, 152 or 158</td>
<td>.9</td>
</tr>
<tr>
<td>Engineering Fundamentals 202</td>
<td>.2</td>
</tr>
<tr>
<td>1Social Sciences General Education Elective</td>
<td>.3</td>
</tr>
</tbody>
</table>

| Second Year | |
| Accounting 200 or 207 | .3 |
| Math 200, 231, 241, or 247 | .8 |
| Physics 213* | .3 |
| Engineering Fundamentals 230 | .2 |
| Industrial Engineering 202, 250 | .4 |
| Materials Science and Engineering 201 | .3 |
| Mechanical Engineering 231, 331 | .6 |

| Third Year | |
| Economics 201* or 207* | .4 |
| Electrical and Computer Engineering 301 | .3 |
| Industrial Engineering 300, 301, 304, 405 | .12 |
| Industrial Engineering 310, 330, 340, 350* | .10 |
| Philosophy 244* | .3 |

| Fourth Year | |
| Industrial Engineering 401, 402, 404, 406 | .10 |
| Industrial Engineering 421, 422, 427, 450 | .10 |
| 2Technical Elective | .3 |
| 3Cultures and Civilizations General Education Elective* | .6 |
| 4Arts and Humanities General Education Elective* | .3 |

Total 128

* Meets General Education Requirement.
1 See Social Sciences – University General Education Requirement. Select one course from the list other than Economics 201 and 207.
2 Technical electives 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.
3 See Cultures and Civilizations – University General Education Requirement. Select two courses from the list or two courses in a foreign language at the intermediate level.
4 See Arts and Humanities – University General Education Requirement. Select one course from the list other than Philosophy 244 or Religious Studies 244.

HONORS CONCENTRATION

Students, who wish to pursue the honors industrial engineering concentration, will normally be part of the Chancellor’s Honors Program. Candidates for the honors concentration in industrial engineering must complete the following requirements.

• First-year courses for honors concentration in engineering majors.

• Two upper-division honors courses in industrial engineering via Honors-by-Contract or Honors Independent Study. The contract or independent study must be submitted to the Chancellor’s Honors Program for approval by the third week of the semester. (Note: These honors requirements are course substitutions for the industrial engineering major.)

• Minimum of 3-credit hours of an honors senior design course. This requirement is normally satisfied as part of their senior capstone design course (Industrial Engineering 422).

DEPARTMENT OF MATERIALS SCIENCE AND ENGINEERING

http://www.engr.utk.edu/mse/

George M. Pharr, Head

Professors

Benson, R.S., PhD .................................................. Florida State
Bhattacharya, P., PhD .............................. Georgia Tech
Breazeale, R.R., PhD .............................. Florida State
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)
Liu, P.K., PhD .............................. Northwestern
Lundin, C.D., PhD .............................. Rensselaer Polytechnic
Mchargue, C.J., PhD .............................. Kentucky
Nief, 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
Meek, T.T., PhD .............................. Ohio State
Morris, J.R., PhD .............................. Cornell
Rack, P.D., PhD .................................................. Florida

Assistant Professors

Choo, H., PhD ................................................. Illinois Institute of Technology
Gao, Y., PhD .................................................. Princeton
He, W., PhD ................................................. Connecticut
Hu, B., PhD ................................................. Chinese Academy of Sciences
Keppens, V., PhD ................................................. Katholieke Universiteit Leuven (Belgium)
Rawn, C.J., PhD .................................................. Arizona
Wang, S., PhD ................................................. Akron

Emeriti Faculty

Brooks, C.R., PhD ................................................. Tennessee
Fellers, J.F., PhD .................................................. Akron

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 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 “commitment 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 Economics 201 (taken as one of the two courses required in the Social Sciences cluster); any two approved courses under the Arts or Humanities cluster; and any two approved courses under the Cultures and Civilizations cluster. The requirement for three courses in writing communication may be filled by English 101 and 102 plus Materials Science and Engineering 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 2.40. This must include Materials Science and Engineering 201.

#### Provisional Status

Students who have completed 50 hours of lower-division engineering curriculum coursework with an overall GPA between 2.00 and 2.40 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 2.00 in at least 8 hours of 300-level required courses specified by the department. Further progression to upper-division courses is dependent upon this minimum level of performance.

#### Transfer Students

At the upper-division level students are admitted on a provisional status basis only. Any student presenting more than 28 hours of lower-division engineering curriculum coursework by transfer credit is considered to be a transfer student.

### MATERIALS SCIENCE AND ENGINEERING MAJOR

#### Requirements for the Bachelor of Science in Materials Science and Engineering

<table>
<thead>
<tr>
<th>First Year</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Materials Science and Engineering 101</td>
<td>1</td>
</tr>
<tr>
<td>1English 101* or 118*, 102*</td>
<td>1</td>
</tr>
<tr>
<td>Chemistry 120* or 128*, 130* or 138*</td>
<td>8</td>
</tr>
<tr>
<td>Mathematics 141* or 147*, 142* or 148*</td>
<td>8</td>
</tr>
<tr>
<td>Engineering Fundamentals 105, 151 or 157, 152 or 158</td>
<td>9</td>
</tr>
</tbody>
</table>

#### Second Year

| Materials Science and Engineering 201, 250, 260, 290, 291 | 11 |
| Physics 231*, 232* | 7 |
| Mathematics 200, 231, 241 or 247 | 8 |
| 2General Education Electives (Social Sciences) | 6 |

#### Third Year

| Materials Science and Engineering 300, 302, 304, 320, 340, 350, 360, 370, 390 | 23 |
| Statistics 251 | 3 |
| 2General Education Electives (Arts and Humanities) | 3 |
| Technical Elective | 3 |

#### Fourth Year

| Materials Science and Engineering 405*(WC), 480, 489*(OC) | 10 |
| Materials Science and Engineering Elective | 6 |
| Electrical and Computer Engineering 301 | 3 |
| Engineering Fundamentals 402 | 1 |
| Technical Elective | 3 |
| 2General Education Electives (Cultures and Civilizations, Arts and Humanities) | 9 |

Total 128

* Meets General Education Requirements.

¹ Students receiving a grade of A or B in English 118 will complete their freshman English requirement by choosing English 102, a sophomore literature course in the English Department, or English 355.

2 General Education courses must include Economics 201 or 207, any two approved courses under the Arts or Humanities cluster, any two approved courses under the Cultures and Civilizations cluster, and one approved course in the Social Sciences cluster.


### HONORS CONCENTRATIONS

Students who wish to pursue the honors materials science and engineering concentration or the honors biomaterials concentration will normally be part of the Chancellor’s Honors Program. Candidates for these honors concentrations must complete the following requirements:

- **First-year courses for honors concentration in the engineering majors**
- **Two upper-division honors courses in Materials Science and Engineering via Honors-by-Contract or Honors Independent Study. The contract or independent study must be submitted to the Chancellor’s Honors Program for approval by the third week of the semester. (Note: These honors requirements are course substitutions for the materials science and engineering major.)**
- A minimum of 3-credit hours of an honors senior design course. This requirement is normally satisfied as part of their senior capstone design course (Materials Science and Engineering 489).

### BIOMATERIALS CONCENTRATION

In addition to satisfying the requirements described the materials science and engineering major, candidates for biomaterials concentration must also satisfy the following stipulations.

<table>
<thead>
<tr>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Required Courses: Materials Science and Engineering 486</td>
</tr>
<tr>
<td>Either: Biology 140(4) or Biochemistry and Cellular Molecular Biology 230(5)</td>
</tr>
<tr>
<td>One of: Materials Science and Engineering 470, 485; Biomedical Engineering 409, 473</td>
</tr>
</tbody>
</table>

Total 10-11
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 coursework 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 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.

**Required Courses**

<table>
<thead>
<tr>
<th>Course Description</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Materials Science and Engineering 201 and 480</td>
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<td></td>
</tr>
<tr>
<td>Select at least one: Materials Science and Engineering 320, 340, 360, 402, 410, and 472</td>
<td>3</td>
<td></td>
</tr>
<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, 465, 469, 473 and 476; Chemistry 350, 360, 369, 430, 439, 450, 473, 483, 479, 489 and 490; Chemical Engineering 230, 301, 447 and 484; Civil and Environmental Engineering 321 and 421; Electrical and Computer Engineering 335; Industrial Engineering 330, 401, and 484; Mechanical Engineering 321, 366, 466 and 484; Nuclear Engineering 484; 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>
<td>9</td>
<td></td>
</tr>
<tr>
<td><strong>Total 18</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**DEPARTMENT OF MECHANICAL, AEROSPACE, AND BIOMEDICAL ENGINEERING**

http://www.engr.utk.edu/mabe/

William R. Hamel, Head

**Professors**

<table>
<thead>
<tr>
<th>Name</th>
<th>Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Armini, R.V., PhD</td>
<td>Virginia Tech</td>
</tr>
<tr>
<td>Baker, A.J., PhD</td>
<td>New York</td>
</tr>
<tr>
<td>Dearing, D.W., PhD</td>
<td>Illinois</td>
</tr>
<tr>
<td>Frankel, J.I., PhD</td>
<td>Virginia Tech</td>
</tr>
<tr>
<td>Hamel, W.R., PhD</td>
<td>Tennessee</td>
</tr>
<tr>
<td>Keyhani, M., PhD</td>
<td>Ohio State</td>
</tr>
<tr>
<td>Khim, K.D., PhD</td>
<td>Stanford</td>
</tr>
<tr>
<td>Komister, R.L., PhD</td>
<td>Memphis</td>
</tr>
<tr>
<td>Landes, J.D., PhD</td>
<td>Lehigh</td>
</tr>
<tr>
<td>Parang, (Associate Dean), PhD</td>
<td>Oklahoma</td>
</tr>
<tr>
<td>Parsons, J.R., PhD</td>
<td>North Carolina State</td>
</tr>
<tr>
<td>Smith, G.V., PhD</td>
<td>Penn State</td>
</tr>
<tr>
<td>Soliman, O., PhD</td>
<td>Tennessee</td>
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**Associate Professors**

<table>
<thead>
<tr>
<th>Name</th>
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<tbody>
<tr>
<td>Boulet, J.A.M., PhD</td>
<td>Stanford</td>
</tr>
<tr>
<td>Chellaboina, V.S., PhD</td>
<td>Georgia Tech</td>
</tr>
<tr>
<td>Lin, C.X., PhD</td>
<td>Chongqing (People’s Republic of China)</td>
</tr>
<tr>
<td>Lyne, J.E., MD, PhD</td>
<td>North Carolina State</td>
</tr>
<tr>
<td>Madhukar, M.S., PhD</td>
<td>Drexel</td>
</tr>
<tr>
<td>Nguyen, K., PhD</td>
<td>Colorado</td>
</tr>
<tr>
<td>Pionke, C.D., PhD</td>
<td>Georgia Tech</td>
</tr>
</tbody>
</table>

**Assistant Professors**

<table>
<thead>
<tr>
<th>Name</th>
<th>Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>DeSmedt, H.A., PhD</td>
<td>Penn State</td>
</tr>
<tr>
<td>He, W., PhD</td>
<td>Connecticut</td>
</tr>
<tr>
<td>Lee, D., PhD</td>
<td>Minnesota</td>
</tr>
<tr>
<td>Mahfouz, M.R., PhD</td>
<td>Colorado School of Mines</td>
</tr>
<tr>
<td>Zhang, M., PhD</td>
<td>Washington (St. Louis)</td>
</tr>
<tr>
<td>Zhao, X., PhD</td>
<td>Virginia Tech</td>
</tr>
</tbody>
</table>

**Emeriti Faculty**

<table>
<thead>
<tr>
<th>Name</th>
<th>Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carley, T.G., PhD</td>
<td>Illinois</td>
</tr>
<tr>
<td>Forrest, J.H., PhD</td>
<td>Iowa State</td>
</tr>
</tbody>
</table>

Hodgson, J., PhD, PE

Johnston, W.S., PhD, PE

Mathews, A., PhD, PE

Milligan, M.W., PhD

Shannon, T.E., PhD, PE

Snyder, W.T., PhD

Wasserman, J.F., PhD, PE

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 first two years of the curriculum are considered to be lower-division and the two remaining years upper-division. Students must apply for progression to departmental upper division courses, which depends on academic performance. Factors considered include overall grade point average, performance in selected lower division courses and evidence of orderly progression through the prescribed curriculum.

**Full Status**

A lower-division student may apply for progression to upper division after completing Chemistry 120, Engineering Fundamentals 202, Mathematics 231, Mechanical Engineering 231 and 321, and Physics 231, with a grade of C or better in each, and an overall GPA of at least 2.40.

**Provisional Status**

Students who have completed Chemistry 120, Engineering Fundamentals 202, Mathematics 231, Mechanical Engineering 231 and 321, and Physics 231 with a grade of C or better and have an overall GPA between 2.00 and 2.40 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 2.00 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 2.00 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. Transfer students must meet the same criteria as non-transfer students, using transfer grades for acceptable substitutions.

**Loss of Full Status**

Full status students are expected to maintain an overall GPA of 2.00 and a GPA of 2.00 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 2.00 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.

**FIVE-YEAR BS-MS PROGRAM**

The department offers a 5-year BS-MS program for qualified students. The primary component of the program is that qualified students may take up to 9 hours of approved graduate courses for their senior undergraduate electives and have them count toward both their bachelor’s and master’s degrees. Significant components of the program are:

- Students must have an overall GPA of at least 3.4 to be admitted to the program. Conditional admission may be
granted after completing 64 hours of required coursework while full admission is granted after completing 96 hours of required coursework with a minimum overall GPA of 3.4 in required coursework.

- Students must at least have conditional admission before taking graduate courses for both their bachelor’s and master’s degrees. All courses taken for graduate credit must be approved by the chair of the program and the Graduate School.
- Admission of students into this program must be approved by the department, the College of Engineering, and the Graduate School.
- Students will not be eligible for assistantships until they complete their bachelor’s degree.

This program may also be used by students entering our doctoral programs directly after receiving their bachelor’s degree.

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 life-long 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

First Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1English 101* or 118*, 102</td>
<td>6</td>
</tr>
<tr>
<td>Chemistry 120* or 128*</td>
<td>4</td>
</tr>
<tr>
<td>Mathematics 141* or 147*, 142* or 148*</td>
<td>8</td>
</tr>
<tr>
<td>Engineering Fundamentals 105, 151 or 157, 152 or 158</td>
<td>9</td>
</tr>
<tr>
<td>Mechanical Engineering 202</td>
<td>2</td>
</tr>
<tr>
<td>2Social Sciences Elective*</td>
<td>3</td>
</tr>
</tbody>
</table>

Second Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mathematics 200, 231, 241 or 247</td>
<td>8</td>
</tr>
<tr>
<td>Aerospace Engineering 201</td>
<td>4</td>
</tr>
<tr>
<td>Physics 231*, 232*</td>
<td>7</td>
</tr>
<tr>
<td>Mechanical Engineering 231, 321, 391</td>
<td>9</td>
</tr>
<tr>
<td>Materials Science and Engineering 201</td>
<td>3</td>
</tr>
<tr>
<td>Engineering Fundamentals 230</td>
<td>2</td>
</tr>
<tr>
<td>Economics 201* or 207*</td>
<td>4</td>
</tr>
</tbody>
</table>

Third Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aerospace Engineering 341, 345, 351, 363, 370</td>
<td>16</td>
</tr>
<tr>
<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>2Arts and Humanities Elective*</td>
<td>3</td>
</tr>
</tbody>
</table>

Fourth Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aerospace Engineering 410*, 422, 424, 425, 426, 429, 449</td>
<td>21</td>
</tr>
<tr>
<td>Engineering Fundamentals 402</td>
<td>1</td>
</tr>
<tr>
<td>2Cultures and Civilizations Electives*</td>
<td>6</td>
</tr>
</tbody>
</table>

Total 128

- Meets University General Education Requirement.
- Students receiving a grade of A or B in English 118 will complete their freshman English requirement by choosing English 102, a sophomore literature course in the English Department, or English 355.
- Choose from the University General Education list.

HONORS AEROSPACE ENGINEERING CONCENTRATION

In addition to satisfying the requirements for the aerospace engineering major, candidates for the honors aerospace engineering concentration must also complete the following requirements.

- First-year courses for honors concentrations in the engineering majors. (Note: Most of the honors requirements are course substitutions for the aerospace engineering major.)
- Two upper-division honors courses in aerospace engineering via Honors-by-Contract or Honors Independent study. The contract or independent study must be submitted to the Chancellor’s Honors Program by the third week of the semester.
- A minimum of 3-credit hours of an honors senior design course. This requirement is normally satisfied as part of the senior capstone design course (Aerospace Engineering 429).

Minor in Aerospace Engineering

The College of Engineering offers a minor in aerospace 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 18 credits. Some of the courses used in the minor may also satisfy requirements for the student’s major. The grade in each of the aerospace engineering courses must be at least C.

Students may enroll in the minor program by completing a form at the Department of Mechanical, Aerospace and Biomedical Engineering, 414 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.

Biomedical Engineering Major

The biomedical engineering curriculum integrates selected engineering sciences and design methods with life science coursework. 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 biomaterials 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 coursework.

**Requirements for the Bachelor of Science in Biomedical Engineering**

**First Year**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>English 101* or 118* or 122*</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Mathematics 141* or 147* or 142* or 148*</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Engineering Fundamentals 105, 151 or 157, 152 or 158</td>
<td>2</td>
<td></td>
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</table>

**Second Year**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physics 231* or 232*</td>
<td>7</td>
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<tr>
<td>Mathematics 200, 231, 241 or 247</td>
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<tr>
<td>Mechanical Engineering 231, 321</td>
<td>6</td>
<td></td>
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<tr>
<td>Biochemistry and Cellular Molecular Biology 230</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>2 Cultures and Civilizations Elective*</td>
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**Third Year**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Credit</th>
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<tbody>
<tr>
<td>Electrical and Computer Engineering 300, 315</td>
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<tr>
<td>Aerospace Engineering 341</td>
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<tr>
<td>Biomedical Engineering 345, 363</td>
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<td>Mechanical Engineering 331</td>
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<td>Economics 201* or 207*</td>
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**Fourth Year**

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<thead>
<tr>
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<tbody>
<tr>
<td>Engineering Fundamentals 402</td>
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<td></td>
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<tr>
<td>Biomedical Engineering 410*, 430*, 469, 473</td>
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<td></td>
</tr>
<tr>
<td>2 Cultures and Civilizations Elective*</td>
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<tr>
<td>3 Technical Elective</td>
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<tr>
<td>3 Departmental Elective</td>
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<tr>
<td>2 Arts and Humanities Elective*</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>2 Social Sciences Elective*</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

**Total 128**

1 Students receiving a grade of A or B in English 118 will complete their freshman English requirement by choosing English 102, a sophomore literature course in the English Department, or English 355.
2 Choose any course from the University General Education list.
3 Departmental and technical electives must be pre-approved by the advisor and department head.

**HONORS BIOMEDICAL ENGINEERING CONCENTRATION**

In addition to satisfying the requirements for the biomedical engineering major, candidates for the honors concentration must also complete the following requirements.

- First-year courses for honors concentrations in the engineering majors. (Note: Most of the honors requirements are course substitutions for the biomedical engineering major.)
- Two upper-division honors courses in biomedical engineering via Honors-by-Contract or Honors Independent Study. The contract or independent study must be submitted to the Chancellor's Honors Program by the third week of the semester.
- A minimum of 3-credit hours of an honors senior design course. This requirement is normally satisfied as part of the senior capstone design course (Biomedical Engineering 469).

**Minor in Biomedical Engineering**

The College of Engineering offers a minor in biomedical 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 30 credits. Some of the courses used in the minor may also satisfy requirements for the student’s major.

Students may enroll in the minor program by completing a form at the Department of Mechanical, Aerospace and Biomedical Engineering, 414 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.

**Required Courses**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engineering Fundamentals 202</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Materials Science and Engineering 201</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Aerospace Engineering 341</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Electrical and Computer Engineering 301</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Mechanical Engineering 331</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Biomedical Engineering 271, 300, 310, 430</td>
<td>13</td>
<td></td>
</tr>
<tr>
<td>Select one from Biomedical Engineering 473, 475 or Other approved 400- or 500-level Biomedical Engineering course</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

**MECHANICAL ENGINEERING MAJOR**

Mechanical engineering involves the design, analysis, testing, and manufacture of mechanical and thermal systems. Mechanical engineers are employed in nearly every industry, from basic research through mass production of energy systems, computer software/hardware, robotics, and automobiles.

Mechanical engineering is a versatile and broadly based engineering discipline that also provides pathways into many exciting fields of specialization. Its foundation is in the basic sciences, but mechanical engineers must further understand such subject areas as mechanical design, solid and fluid mechanics, thermodynamics, heat transfer, vibrations, manufacturing processes, instrumentation and automatic control. Design projects throughout the curriculum develop student skills in handling practical real-world problems. Because of the broad engineering foundation and design training in this program, graduates are found in nearly every industry and at different levels of research, design, and management.

The educational objectives of the mechanical engineering program are

- To educate students thoroughly in methods of analysis, including mathematical and computational skills appropriate for application to engineering problems.
- To develop the skills pertinent to the design process, including skills needed for formulation of problems, analysis, synthesis, and skills pertinent to effective communication and collaborative work.
- To teach students to use modern experimental and data analysis techniques for engineering application.
- To prepare students for lifelong learning, nourish creative talents, and provide understanding of professional and ethical responsibilities.

**Requirements for the Bachelor of Science in Mechanical Engineering**

**First Year**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>English 101* or 118* or 122*</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Chemistry 120* or 128*</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Mathematics 141* or 147* or 142* or 148*</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Engineering Fundamentals 105, 151 or 157, 152 or 158</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Mechanical Engineering 202</td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

**Second Year**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mathematics 231, 241 or 247 or 251 or 257</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Engineering Fundamentals 230</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Physics 231*</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Mechanical Engineering 231, 321, 391</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Materials Science and Engineering 201</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Economics 201* or 207*</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>2 Cultures and Civilizations Elective*</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>
Minor in Mechanical Engineering

The College of Engineering offers a minor in mechanical 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. Some of the courses used in the minor may also satisfy requirements for the student's major.

Students may enroll in the minor program by completing a form at the Department of Mechanical, Aerospace and Biomedical Engineering, 414 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.

Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mechanical Engineering 344, 345, 363 and 466</td>
<td></td>
<td>12</td>
</tr>
<tr>
<td>Select one from Biomedical Engineering 310, Mechanical Engineering 365, 463</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Select one from Aerospace Engineering 449, Biomedical Engineering 430, Mechanical Engineering 449</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Mechanical Engineering 451 or 475</td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

Total 21
• 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 complement 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

First Year
- Chemistry 120* or 128*, 130* or 138* ........................................... 8
- English 101* or 118*, 102* ............................................................. 6
- Engineering Fundamentals 105, 151 or 157, 152 or 158 .................... 9
- Mathematics 141* or 147*, 142* or 148* ........................................ 8

Second Year
- Arts and Humanities Elective* ...................................................... 3
- Economics 201* or 207* ............................................................... 4
- Electrical and Computer Engineering 301 ...................................... 3
- Engineering Fundamentals 202, 230 .............................................. 4
- Mathematics 231, 241 or 247 ....................................................... 7
- Mechanical Engineering 331 ....................................................... 3
- Nuclear Engineering 200 ............................................................. 1
- Physics 231*, 232* ................................................................. 7

Third Year
- Culture and Civilizations Elective* .............................................. 3
- Mathematics 403 ................................................................. 3
- Nuclear Engineering 301, 304*, 342, 351, 431, 470 ......................... 21
- Physics 341 ................................................................. 3
- Social Sciences Elective* ............................................................. 3

Fourth Year
- Culture and Civilizations Elective* .............................................. 3
- Engineering Fundamentals 402 ................................................... 3
- Materials Science and Engineering 201 ........................................ 3
- Mechanical Engineering 321 ..................................................... 3
- Nuclear Engineering 400*, 403*, 406, 472 .................................. 11
- Philosophy 241*, 243*, or 244* ............................................... 3
- Technical Electives ............................................................... 6

Total 126

• A minimum of 3-credit hours of an honors senior design course. This requirement is normally satisfied as part of the senior capstone design course (Nuclear Engineering 472).

RADIOLOGICAL ENGINEERING CONCENTRATION

Requirements for the Bachelor of Science in Nuclear Engineering • Radioengineering Engineering Concentration

First Year
- Chemistry 120* or 128*, 130* or 138* ........................................... 8
- Engineering Fundamentals 105, 151 or 157, 152 or 158 .................... 9
- Mathematics 141*, 142* ............................................................. 8

Second Year
- Arts and Humanities Elective* ...................................................... 3
- Economics 201* or 207* ............................................................... 4
- Engineering Fundamentals 202, 230 .............................................. 4
- Mathematics 231, 241 or 247 ....................................................... 7
- Mechanical Engineering 331 ....................................................... 3
- Nuclear Engineering 200 ............................................................. 1
- Physics 231*, 232* ................................................................. 7

Third Year
- Biology 140 ................................................................. 4
- Culture and Civilizations Elective* .............................................. 4
- Nuclear Engineering 301, 304*, 342, 351, 431, 470 ......................... 18
- Physics 341 ................................................................. 3
- Social Sciences Elective* ............................................................. 3

Fourth Year
- Biochemistry and Cellular and Molecular Biology 230 ........................ 5
- Culture and Civilizations Elective* .............................................. 4
- Nuclear Engineering 400*, 403*, 406, 472 .................................. 11
- Philosophy 241*, 243*, or 244* ............................................... 3
- Statistics 251, Biochemistry and Cellular and Molecular Biology 310, 350 ................................................................. 3
- Technical Elective ............................................................... 3

Total 129

* Meets University General Education Requirement.
  1 Technical electives are selected from upper-division mathematics, chemistry, physics, and engineering courses and must be pre-approved by the department. Pre-medical, pre-veterinary, and pre-dentistry students must also take Chemistry 360 and Chemistry 369.

HONORS RADIOLOGICAL ENGINEERING CONCENTRATION

In addition to satisfying the requirements described for the nuclear engineering major (radiological engineering concentration), candidates for the honors radiological engineering concentration must also complete the following requirements.

• First-year courses for honors concentrations in the engineering majors. (Note: Most of the honors requirements are course substitutions for the nuclear engineering major.)

• Two upper-division honors courses in nuclear engineering via Honors-by-Contract or Honors Independent Study. The contract or independent study must be submitted to the Chancellor’s Honors Program by the third week of the semester.

• A minimum of 3-credit hours of an honors senior design course. This requirement is normally satisfied as part of their senior capstone design course (Nuclear Engineering 472).
College of Nursing

Joan Creasia, Dean
Jan L. Lee, Associate Dean for Academic Affairs
Kenneth Phillips, Associate Dean for Research
Gary Ramsey, Chair of Undergraduate Program
Beth Barret, Director of Student Services

http://nightingale.con.utk.edu/

Professors
Creasia, J., PhD ........................................ Maryland
Farr, G., PharmD ........................................ Tennessee
Hall, J., PhD ........................................... San Francisco
Lee, J., PhD ............................................. Southern California
McGuire, S., EdD ....................................... Tennessee
Phillips, K., PhD ....................................... Tennessee
Thomas, S., PhD ....................................... Tennessee

Associate Professors
Bell, D., DNSc ....................................... Tennessee
Chen, S., PhD .......................................... Utah
Davis, M., PhD ....................................... Tennessee
Gaylord, N., PhD ..................................... Tennessee
Preston, J., DNSc ..................................... Tennessee
Shoffner, D., PhD ..................................... Tennessee
Speraw, S., PhD ..................................... California

Assistant Professors
Beebe, L., PhD .......................................... Kentucky
Brown, A., MSN ....................................... Alabama (Birmingham)
Brown, M., PhD ....................................... Tennessee
Callen, B., PhD ....................................... Wisconsin
Dyess, R., MSN ....................................... Tennessee
Evans, G., MSN ....................................... Tennessee
Fields, B., PhD ........................................ Tennessee
Gunther, M., PhD ..................................... Tennessee
Helton, S., MSN ......................................... Texas Woman’s
Kollar, M., PhD ....................................... Tennessee
Mefford, L., PhD ....................................... Tennessee
Myers, C., PhD ....................................... Tennessee
Nalle, M., PhD ......................................... Tennessee
Pierce, M., MSN ....................................... Tennessee
Roman, M., PhD ...................................... Kentucky
Wade, J., PhD ......................................... Tennessee
Witucki, J., PhD ...................................... Tennessee
Wyatt, T., PhD ....................................... Virginia

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 Commission on Collegiate Nursing Education at One Dupont Circle, NW, Suite 530, Washington, DC 20036, phone (202) 887-6791. 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 assume beginning leadership positions in nursing in a variety of settings; work collaboratively with other health professionals; function as socially conscious and contributing citizens; and pursue advanced education on either a formal or an informal basis.

The following courses are open to all university students:
Nursing 351, 400, 402, and 406.

General Requirements

In order to obtain a Bachelor of Science in Nursing degree, students are required to successfully complete eight semesters of full-time study or the equivalent in part-time study, for a total of 123-124 semester hours. One hundred twenty-three (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 351, 400, 402, and 406, are restricted to students who have been approved for progression. (See Progression Policies and Procedures.) Students pursuing the nursing major are expected to take 319 prior to 351.

Nursing Substitutions

Child and Family Studies 210 or Psychology 300; Chemistry 100, 110 or 120, 130; Microbiology 210 or 310 with 319 lab.
Progression Policies and Procedures

Current standards are available from the Director of Student Services, College of Nursing, Room 203. Students, including registered nurses, who are admitted as nursing students in their freshman or sophomore years must apply for progression to the upper division prior to their junior year.

1. During the Spring Semester of the year the student expects to meet all lower-division course requirements, she/he must complete a Petition for Progression form and submit it to the college’s Student Services Office. Applicants for upper division nursing should submit their Petition for Progression with transcripts for all colleges attended no later than January 20. Students will be selected on the basis of (a) cumulative GPA for courses completed; (b) cumulative GPA for required science, social science, math, and English courses; (c) number of course withdrawals and repetitions; (d) grade improvement over time; (e) probability of completing all lower division requirements prior to the following fall; (f) interest in and commitment to nursing; and (g) 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 Tennessee or in one of the compact states.

4. Prior to enrollment in junior nursing courses, students must successfully complete a criminal background check and specific health requirements.

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. For undergraduate nursing students, 75% is the passing average grade in all nursing courses. To pass any clinical course, a student must achieve a minimum 75% weighted average 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 75% weighted average on course examinations, the final course grade will be either D (67-74) or F (under 67). The following grading scale applies to all undergraduate nursing courses.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>92-100</td>
</tr>
<tr>
<td>B+</td>
<td>88-91</td>
</tr>
<tr>
<td>B</td>
<td>83-87</td>
</tr>
<tr>
<td>C+</td>
<td>79-82</td>
</tr>
<tr>
<td>C</td>
<td>75-78</td>
</tr>
<tr>
<td>D</td>
<td>67-74</td>
</tr>
<tr>
<td>F</td>
<td>&lt;67</td>
</tr>
</tbody>
</table>

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 a grade of Incomplete 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.

The Bachelor of Science in Nursing program is designed to fulfill The University General Education Requirements. Please see the current catalog for courses acceptable in the arts and humanities and cultures and civilizations categories.

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 students must participate in the university’s group professional liability insurance program. 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>Course Load</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Year</td>
<td>124</td>
</tr>
<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>
<tr>
<td>Second Year</td>
<td>69</td>
</tr>
<tr>
<td>Ecology and Evolutionary Biology 240 (Anatomy)</td>
<td>.4</td>
</tr>
<tr>
<td>Biochemistry and Cellular and Molecular Biology 230 (Physiology)</td>
<td>.5</td>
</tr>
<tr>
<td>Microbiology 210*</td>
<td>.3</td>
</tr>
<tr>
<td>Nutrition 100*</td>
<td>.3</td>
</tr>
<tr>
<td>Child and Family Studies 210*</td>
<td>.3</td>
</tr>
<tr>
<td>Nursing 201 (Introduction to Nursing)</td>
<td>.2</td>
</tr>
<tr>
<td>Cultures and Civilizations*</td>
<td>.6</td>
</tr>
<tr>
<td>Philosophy 246*</td>
<td>.3</td>
</tr>
<tr>
<td>Third Year</td>
<td>61</td>
</tr>
<tr>
<td>Nursing 311, 319, 333, 341*, 351, 361, 381, 382</td>
<td>.28</td>
</tr>
<tr>
<td>Fourth Year</td>
<td>63</td>
</tr>
<tr>
<td>Nursing 403*, 404, 406, 421, 451, 452, 461, 471 or 477, 490</td>
<td>.31</td>
</tr>
</tbody>
</table>

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.

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 Examination and passing a hands-on lab demonstration of assessment skills. Indicated with an asterisk. (Satisfactory/No Credit.)
5. Proficiency credit can be obtained in several other courses by passing instructor-made exams or preparing other work as specified by the faculty. These course include 319 Pathophysiology of Health Deviations, 351 Pharmacology I, and 406 Pharmacology II (indicated by an asterisk). 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.

<table>
<thead>
<tr>
<th>Requirements for the RN Track for Bachelor of Science in Nursing</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>201 Introduction to Nursing (proficiency credit for all RNs)</td>
<td>2</td>
</tr>
<tr>
<td>305 Transition to Professional Nursing</td>
<td>4</td>
</tr>
<tr>
<td>319* Pathophysiology</td>
<td>4</td>
</tr>
<tr>
<td>333* Health Assessment</td>
<td>3</td>
</tr>
<tr>
<td>341 Transcultural Nursing</td>
<td>2</td>
</tr>
<tr>
<td>351* Pharmacology I</td>
<td>2</td>
</tr>
<tr>
<td>361** Health Maintenance and Restoration: Adult</td>
<td>5</td>
</tr>
<tr>
<td>382 Health Promotion and Maintenance in Community</td>
<td>5</td>
</tr>
<tr>
<td>403** Health Promotion, Maintenance, and Restoration in Children, Adolescents, and Their Families</td>
<td>5</td>
</tr>
<tr>
<td>404** Health Promotion, Maintenance, and Restoration in Children, Adolescents, and Their Families</td>
<td>5</td>
</tr>
<tr>
<td>406* Pharmacology II</td>
<td>2</td>
</tr>
<tr>
<td>421** Health Maintenance and Restoration in Mental Health</td>
<td>5</td>
</tr>
<tr>
<td>454 Professional Leadership Issues (OC)</td>
<td>2</td>
</tr>
<tr>
<td>461** Health Restoration: Adult</td>
<td>4</td>
</tr>
<tr>
<td>471 Nursing Research</td>
<td>3</td>
</tr>
<tr>
<td>494 Alternative Preceptorship (WC)</td>
<td>4</td>
</tr>
<tr>
<td>Electives</td>
<td>3</td>
</tr>
<tr>
<td>** Total 123 **</td>
<td></td>
</tr>
</tbody>
</table>

* Courses may be challenged.
** Courses may receive proficiency credit.
College of Social Work

Karen M. Sowers, Dean
Matthew T. Theriot, Interim Director

http://www.csw.utk.edu/

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, 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 a grade of 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 overload.

Progression Requirements
Students admitted to the university may request a faculty advisor from the College of Social Work. Prior to enrolling in upper-division social work courses, students in the college must successfully complete Social Work 200 and 250 with a grade of C or better, be in good academic standing, and have fulfilled most lower-division and General Education course requirements. Students in the college are encouraged to participate in community service and/or volunteer activities at a social service agency in advance of upper-division social work coursework. Students are advised that several field placement agencies and licensing boards require successfully passing a criminal background check.

Requirements for the Bachelor of Science in Social Work

<table>
<thead>
<tr>
<th>First Year</th>
<th>Hours Credit</th>
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<tbody>
<tr>
<td>English 101, 102*</td>
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<td>Communication Studies 210*</td>
<td>.3</td>
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<tr>
<td>2Arts and Humanities*</td>
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<td>Anthropology 130*</td>
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<td>Social Work 480, 481</td>
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<td>Social Work 460</td>
<td>.3</td>
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<tr>
<td>Elective</td>
<td>.9</td>
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</tbody>
</table>

Total 120

* Meets University General Education Requirement.

1 Students are required to complete a two-course sequence in a foreign language at the intermediate level. Educational Interpreting 223 and 226 will fulfill the foreign language requirement but will not meet the University General Education Requirement.

2 See Arts and Humanities—University General Education Requirement. Select two courses from the list in the Undergraduate Catalog.

3 One of the following sequences may be selected – Africana 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.

Intercollegiate/Interdisciplinary Minor in Gerontology
An intercollegiate/interdisciplinary undergraduate minor in gerontology is available. See Department of Exercise, Sport, and Leisure Studies in the College of Education, Health, and Human Sciences for required courses.
The Chancellor’s Honors Program is the University of Tennessee's principal honors program, serving 5% of students and representing the majors in all nine of the university's undergraduate colleges. The Chancellor's Honors Program is built on four cornerstones: coursework, community, research, and participation in the Ready for the World Initiative. Featuring limited enrollments and dynamic faculty, enhanced and enriched honors coursework is offered by the Chancellor's Honors Program, as well as by departments across the university. Based in Morrill Hall, the honors living/learning community welcomes first-year, as well as returning, Chancellor's Honors students, as does the Honors Council, the Chancellor's Honors Program student government. Chancellor's Honors students may also benefit from exclusive grants in support of required Senior Projects and required international or intercultural learning. In recognition of their exceptional academic achievement, Chancellor's Honors students receive special graduation recognitions.

Eligibility

The Chancellor's Honors Program is available to entering freshmen and to qualified transfer and sophomore students. High school seniors with superior academic credentials are encouraged to apply. While there is no required minimum high school GPA or minimum ACT/SAT score, recent entering classes have had an average high school GPA of 4.0 and an average composite ACT of 31.

Transfer students who have earned at least a 3.50 GPA in another honors program are eligible to apply, as are continuing UT students who have earned a minimum GPA of 3.25 on courses taken at UT Knoxville.

Requirements

In addition to required work in their respective colleges, Chancellor’s Honors students complete

- English 118 (required), except for (1) incoming students with a 4 or 5 on the Literature and Composition AP test or with dual-enrollment credit for English 101 and 102, and (2) incoming students with a 4 or 5 on the Language and Composition AP test or with dual-enrollment credit for English 101 (and who must, therefore, enroll in English 102).
- One 1-credit University Honors seminar (University Honors 100).
- One 200-level University Honors seminar to be completed during the second semester of freshman year.
- Four additional 100- or 200-level honors courses selected from University Honors courses or departmental honors offerings.
- Two upper-division honors courses in their major (Honors-by-Contract or Honors Independent Study may be substituted).1
- One 3-credit senior project (University Honors 499 or equivalent approved by CHP).

TOTAL: 25-28 credit hours of honors coursework.

All Chancellor’s Honors students are required to undertake approved international/intercultural learning to fulfill the Chancellor's Honors Program graduation requirements. The international/intercultural graduation requirement may be fulfilled through participation in an approved study-abroad program, an approved international/intercultural internship, or via the completion of an undergraduate major or minor in a foreign language.

1 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 CHP by the third week of the semester. Honors-by-Contract is available to Chancellor’s Honors students, College Scholars, and students participating in a departmental or college-level honors program at UT Knoxville.
The Haslam Scholars Program is composed as an intimate, four-year enrichment program where elite students learn from and with one another through a series of integrated, interdisciplinary common seminars and extracurricular experiences, including common study abroad. The Haslam Scholars Program seeks a group of students who embrace the program’s emphasis on peer learning, make a commitment to its required four-year course of study, and are excited by the numerous possibilities afforded them to contribute significant forms of leadership and service. Prospective Haslam Scholars will combine exceptional scholarly and intellectual merit with evidence of leadership experience and potential. Maturity and seriousness of purpose, along with evidence of special talents and skills, are among those intangibles essential to the success of an intimate, intensive scholars program.

The Haslam Scholars Program curriculum totals 28 credit hours, and extends from a 1-credit summer program for newly matriculating first-year scholars to a 1-credit senior seminar in the scholar’s final semester. The curriculum serves the Haslam Scholar as the equivalent of the 28 credit hours required of Chancellor’s Honors students and contributes significantly to General Education requirements in every undergraduate degree program. Students in the Haslam Scholars Program must also be members of the Chancellor’s Honors Program.

As with the Chancellor’s Honors Program, no strict grade-point average or test score minimums will be used in the Haslam Scholars Program selection process. It is, however, expected that Haslam Scholars are likely to have earned a truly superior GPA in a rigorous high school curriculum and scored in the top 1% of the national distribution of standardized test scores (e.g., 33+ ACT composite, 1460+ SAT or 2190+ new SAT).

The Haslam Scholars Program curriculum is 28 credit hours in total, composed of two 1-credit hour special seminars and programs in the first year, a minimum of 4 credit hours of honors coursework in the first-year, an exclusive integrated series of three 3-credit hour seminars linked, at their conclusion, to a common 3-credit hour study abroad program, and 6 credit hours of in-depth individual research and its presentation to a 1-credit hour senior colloquium. Haslam Scholars will also engage in three credit hours of common service-learning or executive-level internships.

Required Courses

- Haslam Scholars Program 195 Summer Leadership Program (1)
- University Honors 100 Chancellor’s Honors First-Year Seminar (1)
- English 118 (3); or AP or dual enrollment credit. See The Chancellor’s Honors description for more detail.
- Haslam Scholars Program 197 Research for Nationally Competitive Scholarships (1)
- Haslam Scholars Program 258 Foundations of Modernity (3) (AH)
- Haslam Scholars Program 268 Perspectives on Globalization (3) (SS)
- Haslam Scholars Program 288 Energy in the Modern World (3) (NS)
- Haslam Scholars Program 348 Service Learning Project/Internship (3)
- Haslam Scholars Program 491 Study Abroad Program (3)
- Haslam Scholars Program 497 Honors Thesis I (3)
- Haslam Scholars Program 498 Honors Thesis II (3)
- Haslam Scholars Program 499 Senior Colloquium (1)

For more information on this program and the application process, please see the Haslam Scholars Program on the Chancellor’s Honors Program Web site (http://honors.utk.edu/).
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 ongoing, 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 Appalachian Forum; Applied Phenomenological Studies; Creativity Group; Critical Theory; Cultural Diversity; Evolution and Culture; Gerontology; History and Philosophy of Science and Technology; Interdisciplinary Colloquy on Rhetoric; Spiritual and Critical Theory; and Spirituality and Health. 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, Chancellor’s Honors students are encouraged to take a university studies (200-level or higher) course during their first two years to help fulfill their honors courses requirement.

Centripetals are monthly faculty and staff luncheons held over the academic year designed to encourage interdisciplinary 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

http://web.utk.edu/~unistudy/
ARMY ROTC
Professor of Military Science and Leadership
Major (P) James K. Haynes
MA ................................................................. Webster
BBA ................................................................. Mississippi State

Senior Military Science Instructors
Lieutenant Colonel Ron E. Borden, MS ................. Tennessee
Major Mark Chitwood, MS ................................. Jacksonville State
Major John Wells, MA ........................................ Middle Tennessee State
Captain Michael Lee, BS .................................... Phoenix
1LT Mark Lee, BS ............................................. Excelsior

Military Science Instructors
Master Sergeant Michael Dougherty
Sergeant First Class Herbert Gill
Sergeant First Class Stephen Perry

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 continued to be taught since the university was a Land Grant Institution and the 1862 Act of Congress required instruction in military science.

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 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-
Requirements for Enrollment and Continuance

The general requirements for enrollment and continuance in the Army ROTC program are as follows.

1. Basic course students must
   a. Be a citizen of the United States.
   b. Be physically qualified.
   c. Have freshman or sophomore standing. Students with higher standing require consent of instructor.

2. Basic course students 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 ROTC program, completion of Military Science and Leadership 200, or completed funds-applied training for advanced individual training. A student may request placement credit for a portion or 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.
   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 nearby institution in a partnership program.
   f. Meet military screening and physical requirements.
   g. Maintain a 2.00 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.

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 advanced course (Military Science and Leadership 301, 302, 400, 401, 402) – 2.00 G.P.A.

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.

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 Office Services (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 $300 to $500 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 assistance 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 cardiorespiratory 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

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Military Studies – Practicum

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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.

Department of Air Force

http://web.utk.edu/~rotc800/

Air Force ROTC Program

Professor of Air Force Aerospace Studies
Lt. Colonel Michael S. Angle, MBA ............................... 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.

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 2 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/.

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 2.50 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.

First Year

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<thead>
<tr>
<th>Course</th>
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<tr>
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<td>Aerospace Studies 203, 204</td>
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Fourth Year

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<tr>
<td>Aerospace Studies 403, 404</td>
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</tr>
<tr>
<td>(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.
The University of Tennessee Libraries own approximately 2.6 million volumes and subscribe to more than 32,000 periodicals and serial titles. The UT Libraries are committed to providing access to information in all formats. A strong collection of electronic resources are available through the Libraries' webpage at www.lib.utk.edu. UT's Digital Library Center hosts a growing number of digital collections. 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.

Experts in each library offer help and assistance in using the library for research. AskUs.Now (www.lib.utk.edu/refs/askus-now/) provides chat, e-mail, IM (instant message), and telephone connections to librarians. Students will find a wide variety of materials and services in the main library (John C. Hodges Library), three branches on the Knoxville campus (Agriculture and Veterinary Medicine Library, Music Library, and Special Collections), and the Social Work Library in Nashville.

Students can search the library catalog and hundreds of databases at any library location — and through the UT Libraries' website. Interlibrary Services is available to help students find and retrieve materials that are not available in the UT Libraries. Workshops and classes are offered throughout the semester to help students learn how to get the most out of the Libraries' services. The services and facilities of the UT Libraries are accessible to persons with disabilities.

The John C. Hodges Main Library (1015 Volunteer Blvd.) is a 350,000 square-foot building housing collections in all subject areas. Research assistance is available in the Commons (Rooms 220 and 235). Research Services (Room 135) offers more in-depth research consultation. The Commons, which is jointly staffed by the University Libraries and the Office of Information Technology, also offers a computer help desk, a wide range of software applications and computer equipment, spaces for individual and group study, and loaner laptops configured to access the wireless network. The Commons is open continuously from noon on Sunday to midnight on Friday, during Fall and Spring Semesters. A coffee shop and supply store on the second

* Data describe the Knoxville campus, excluding the Law Library. The Law Library on the Knoxville campus and the libraries located on the campuses in Chattanooga, Martin, Memphis, and Tullahoma are separately administered.
floor serve students throughout the day and evening hours. The Studio (Room 245) offers students a state-of-the-art lab for graphics, video and web production. Still and video cameras are available for checkout from the Studio. Map Services (Room G20) supports students' research and everyday needs for maps and geographic information.

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 Music Library (301 Music Bldg.) 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 is dedicated to building collections of manuscripts, rare books, and other unique research materials. Collection strengths include Tennessee authors, Tennessee history and politics, Oak Ridge, and TVA. The Great Smoky Mountains Regional Collection is an ongoing effort to collect and preserve materials on the region. Students are welcome to use Special Collections. Materials from Special Collections cannot be checked out but may be used on site.

The Libraries maintain the university's Archives. The Archives, housed in Hoskins Library, 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 (Room 292, 193-E Polk Ave., 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.

Students and faculty may use the libraries at any of the University of Tennessee campuses across the state.
Courses of Instruction

Courses fulfilling the University General Education Requirement are designated as:

(AH) Arts and Humanities
(CC) Cultures and Civilizations
(OC) Communicating Orally
(NS) Natural Sciences
(QR) Quantitative Reasoning
(SS) Social Sciences
(WC) Communicating through Writing

REGISTRATION NOTES:
(De) Prerequisite(s) and Corequisite(s) will be enforced by the Registration System in the future. They are currently enforced by the department.
(Re) Prerequisite(s) and Corequisite(s) are enforced by the department.
Registration Restrictions are enforced by the Registration System.

Accounting (009)

200 Foundations of Accounting (3) Introduction to financial and managerial accounting theory and practice with emphasis on the role of accounting information in business decisions.

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.

Recommended Background: 28 ACT composite or 1250 composite SAT required.


(Re) Prerequisite(s): Finance 301 and Business Administration 342.

Registration Restriction(s): Majors in the College of Business Administration.

311 Financial Reporting and Analysis (3) Theory and practice that underlies the preparation, analysis, and use of financial statements.

(Re) Prerequisite(s): 301.

Comment(s): Grade of C or better in 301 is required.

Registration Restriction(s): Majors in the College of Business Administration.

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.

(Re) Prerequisite(s): 301.

Registration Restriction(s): Majors in the College of Business Administration.

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.

(Re) Prerequisite(s): 301.

Comment(s): Grade of C or better in 301 is required.

Registration Restriction(s): Majors in the College of Business Administration.

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.

(Re) Prerequisite(s): 311.

Comment(s): Grade of C or better in 311 is required.

Registration Restriction(s): Majors in the College of Business Administration.

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.

(Re) Prerequisite(s): 301.

Comment(s): Grade of C or better in 301 is required.

Registration Restriction(s): Majors in the College of Business Administration.

492 Accounting Internship (1-6) Grading Restriction: Satisfactory/No Credit grading only. Repeatability: May be repeated. Maximum 6 hours.

Registration Restriction(s): Accounting major.

Registration Permission: Consent of instructor.

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.

(Re) Prerequisite(s): 250.

Registration Restriction(s): Advertising major or public relations major.

340 Advertising Research Methods (3) Secondary data and primary research techniques for advertising decisions.

(Re) Prerequisite(s): 250 and Statistics 201.

Registration Restriction(s): Advertising major or public relations major.

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.

(Re) Prerequisite(s): 250 and 310.

Registration Restriction(s): Advertising major or public relations major.

360 Advertising Media Strategy (3) Assessment of markets, vehicle audiences, and mathematical techniques for advertising planning. Instruction in media planning, buying, and evaluation.

(Re) Prerequisite(s): 250 and 340.

(Re) Corequisite(s): 380.

Registration Restriction(s): Advertising major or public relations major.


(Re) Prerequisite(s): 340.

Registration Restriction(s): Advertising major or public relations major.
450 Advertising Management (3) Case-study approach to advertising decisions. Data analysis and interpretation, generating alternative strategies, oral and written presentation of recommendations. (RE) Prerequisite(s): 350 and 360. Registration Restriction(s): Advertising major or public relations major.

470 Advertising Campaigns (3) Group-based development, execution, and evaluation of an advertising campaign for a regional or national client. (RE) Prerequisite(s): 450 and Public Relations 370. Registration Restriction(s): Advertising major or public relations major.

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. (RE) Prerequisite(s): 360. Registration Restriction(s): Advertising major or public relations major.

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. (RE) Prerequisite(s): 360. Registration Restriction(s): Advertising major or public relations major.

492 Advertising Practicum (1) Experience in a functional area of advertising. Contact Hour Distribution: 10 hours laboratory each week. Grading Restriction: Satisfactory/No Credit grading only. Repeatability: May be repeated. Maximum 2 hours. Registration Restriction(s): Advertising major or public relations major.

493 Independent Study (1-3) Individual study in a specialized area under the supervision of a faculty member. Repeatability: May be repeated. Maximum 3 hours. Registration Restriction(s): Advertising major or public relations major.

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. Contact Hour Distribution: 10 hours laboratory each week. Grading Restriction: Satisfactory/No Credit grading only. Registration Restriction: Consent of instructor.

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. (RE) Prerequisite(s): Mechanical Engineering 231 and 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. (RE) Prerequisite(s): 341 and Electrical and Computer Engineering 301. (RE) Corequisite(s): Mechanical Engineering 363.

351 Compressible Flow (3) One-dimensional internal flow with shocks, friction, and nonadiabatic conditions. Two-dimensional external flows. (RE) Prerequisite(s): 341 and Mechanical Engineering 331.

363 Structural Analysis of Aerospace Vehicles (3) Fundamentals of structural analysis applied to configurations common to aerospace vehicles. (RE) Prerequisite(s): Mechanical Engineering 321.

370 Airplane Performance (4) Airplane aerodynamics, characteristics of propulsion systems, prediction of airplane performance, static and dynamic stability, and control of aircraft. (RE) Corequisite(s): 351.

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. (OC) (RE) Prerequisite(s): English 102. Registration Restriction(s): Minimum student level – senior.

422 Aerodynamics (3) Theory and design of aerodynamic bodies for desired characteristics: potential flow theory, viscous effects, and compressibility effects. Subsonic, transonic, and supersonic airfoils. (RE) Prerequisite(s): 351 and 370.

424 Astronautics (4) Solar system; orbital mechanics; propulsion; atmospheric entry, including thermal protection materials, human factors in space flight, the space environment, and current topics. (RE) Prerequisite(s): 351. (RE) Corequisite(s): Mechanical Engineering 344.


426 Introduction to Aerospace Design (2) Design process, synthesis, design studies. Individual design reports required. (RE) Prerequisite(s): 351 and 370. (DE) Prerequisite(s): 425. (DE) Corequisite(s): Mechanical Engineering 344.

429 Aerospace System Design (3) Synthesis and design of a complete aerospace system. Participation in team design effort including formal presentations and design report. (RE) Prerequisite(s): 426 and 422. (DE) Prerequisite(s): 425.

449 Aerospace Engineering Laboratory (3) Designing, conducting, and reporting results of experimental exercises. Test standards and specifications. Analysis of data and formation of conclusions. Contact Hour Distribution: 3 hours lab per week. (RE) Prerequisite(s): 345 and 351.

494 Selected Topics in Aerospace Engineering (1-4) Problems and topics related to developments and practice in aerospace engineering. Repeatability: Not repeatable. May be taken once for 1-4 hours. Registration Permission: Consent of instructor.

495 Selected Topics in Aerospace Engineering (1-4) Problems and topics related to developments and practice in aerospace engineering. Repeatability: Not repeatable. May be taken once for 1-4 hours. Registration Permission: Consent of instructor.

African Studies (023)

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 War through the Civil Rights era which focuses on such topics as African-American rural and urban societies, the African-American church and education and African-American intellectual and protest movements. (SS)

225 Introduction to African Literature (3) Survey of first wave of African literature up to the mid-1960's; course discusses the major genres and emphasizes comparative, cross-cultural and cross-national approaches. Writing-emphasis course. (Same as English 225.) (AH) (RE) Prerequisite(s): English 102 or 118.

226 Introduction to Caribbean Literature (3) (See English 226.) (AH)

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, pre-colonial democracies, and states from the first through the 16th century. Writing-emphasis course. (CC)

236 Introduction to African Studies (3) Multidisciplinary study of Africa and its incorporation into the world economy between the 16th and the 20th centuries. 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 Musicology 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) (See English 331.)

333 Black American Literature and Aesthetics (3) (See English 333.)

335 African Literature (3) Survey of the major works and issues in African literature from the mid-1960's to the present. Special emphasis placed on the refashioning of the English language to carry an identifiable African experience; focus on fiction and drama, applicable theory and critical terms. Writing-emphasis course. (Same as English 335.) (RE) Prerequisite(s): English 102 or 118.

336 Caribbean Literature (3) (See English 336.)

343 Race and Ethnicity (3) (See 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 African History (3) (See History 371.)

372 African History (3) (See History 372.)

373 African History (3) (See History 373.)

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.

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 Africana Studies (3) Teaches basic approaches to the research process and the development of research skills. (RE) Prerequisite(s): 201 and 202. Recommended Background: Mathematics 115 or Statistics 201. Registration Restriction(s): Minimum student level – senior.

432 Senior Research Project (3) Students design and implement a research project of their choice in the field of Africana studies. Writing-emphasis course. Recommended Background: Either 431, Anthropology 431, Political Science 401, Psychology 295, Sociology 331, or approved comparable research methods course. Registration Restriction(s): Interdisciplinary programs major – Africana studies concentration.

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. Repeatability: 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.)

470 African-American Art (3) (See Art History 470.)

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 youth who wish to survive. Includes political, economic, and social factors utilized by black people in developing coping strategies and mechanisms. Writing-emphasis course.

484 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 484.)

491 Foreign Study (1-6) Repeatability: May be repeated. Maximum 6 hours. (RE) Prerequisite(s): 201 and 202. Registration Permission: Consent of instructor.

492 Off-Campus Study (1-6) Repeatability: May be repeated. Maximum 6 hours. (RE) Prerequisite(s): 201 and 202. Registration Permission: Consent of instructor.

493 Independent Study (1-6) Repeatability: May be repeated. Maximum 6 hours. (RE) Prerequisite(s): 201 and 202. Registration Permission: 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. Requirements include daily journal, formal written report, completion of required hours, and seminar.

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. Repeatability: May be repeated. Maximum 6 hours.

345 Program Planning in Agriscience 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. Includes a lab component. (RE) Prerequisite(s): 211.

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 utilizing resources, multimedia, and computer technology into instruction. To be taken in the fall prior to student teaching. Includes a lab component. (RE) Prerequisite(s): 345.

435 Student Teaching in Agricultural and Extension Education (6) Full-time teaching practicum in an approved high school program. Applied practices needed by agricultural education teachers.

436 Student Teaching in Agricultural and Extension Education (6) Full-time teaching practicum in an approved high school program. Applied practices needed by agricultural education teachers.

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. (WC) (RE) Prerequisite(s): English 101 and English 102. Registration Restriction(s): Minimum student level – junior.

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. Registration Restriction(s): Minimum student level – junior.

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. Repeatability: May be repeated. Maximum 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. Repeatability: May be repeated. Maximum 6 hours.

Agricultural and Natural Resource Leadership (043)

101 Introduction to Agricultural and Natural Resource Leadership (1) Analyze and evaluate students’ current beliefs about leadership and recognize and identify behaviors used by effective leaders in the field of agricultural and natural resources.

102 Leadership Development in Small Groups and Teams (3) Learning about leadership dynamics in small groups and how to be more influential in social and work settings related to the area of agricultural and natural resources.
202 Leadership and Diversity in Organizations and Communities (3) Analysis of the dynamic interactions of personal characteristics, technical skills, interpersonal influence, commitment, goals, and power necessary for both leader and follower effectiveness in complex agricultural and natural resource organizations. Examination of leadership theories and their applications in diverse organizations and communities.

303 Classic Figures in Leadership (3) Examination of leadership from an applied context. Leadership is analyzed through a variety of genres: autobiography, drama, fiction, tracts and treatises, and speeches.

304 Leadership, Motivation, Power and Influence (3) Classical and contemporary motivation theories as applied to leadership in agricultural and natural resource organizations and communities. Organizational influence processes, power and influence in organizations and communities.

412 Seminar in Agricultural and Natural Resource Leadership (3) Analyzing contemporary issues in the field of agricultural and natural resource leadership.

410 Internship in Agricultural and Natural Resource Leadership (3) Pre-approved supervised experience with agricultural firm or organization in the area of leadership.

Agricultural Economics (047)

110 Opportunities in Agricultural Economics and Business (1) Overview of current issues and career opportunities for majors and non-majors.

201 Economics of the Global Food and Fiber System (4) Introduction to microeconomic and macroeconomic principles and their application to the global food and fiber system. Specific topics include consumer and producer behavior, market equilibrium, monetary and fiscal policy, and international trade.

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 and Environmental Law (3) Survey of legal topics related to agriculture and the natural environment. Topics include introduction to legal system, real property, civil liabilities, contracts, commercial transactions, environmental and natural resource regulation, farm and business organization, estate planning, and effective utilization of legal counsel.

320 Agricultural Microeconomics (3) Application of microeconomics to agriculture. Production, consumption, firm behavior, and efficiency in the food and fiber industries.

324 Quantitative Methods in Agricultural Economics (3) Quantitative analytical tools used in economics and business. Simple and multiple linear regression techniques applied to economic data. Analysis of cross-section and time series data. Optimization techniques applied to economic and business decisions.

342 Farm Business Management I (3) Principles and procedures for determining most profitable business organizations and systems of operation; attention to traditional and nontraditional agricultural enterprises and businesses; nature of managerial processes; business records and their uses; budgeting, acquisition and management of capital, land, labor and machinery; farm business planning.

350 The Food and 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.

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.

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.

410 Seminar in Agricultural Economics and Business (1) Practice of critical thinking, ethical behavior, teamwork, and conflict resolution within the context of agribusiness decision-making. Analysis of contemporary issues in the field of agricultural economics.

412 Agricultural Finance (3) Macro-finance, financial objectives, acquisition of debt and equity funds, capital investments, capital allocation, debt repayment, credit analysis, borrower and lender loan application analysis, insurance strategies, computer applications, kinds and sources of agricultural credit, and financial intermediation.

420 International Agricultural Trade and Marketing (3) Introduction to real and monetary aspects of international trade effect on agricultural commodities; partial equilibrium analysis of international trade in agricultural products; institutional aspects of international marketing of agricultural products.

430 Food and 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.

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.

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.


471 Applied Policy Analysis for Environmental and Natural Resource Management (3) Application of a policy analysis framework to conflicts and issues associated with natural resource use and related environmental quality impacts. Design of institutional changes to improve economic efficiency and equity, with emphasis on the potential applicability of market-type and incentive-based policy mechanisms.

492 Off-Campus Internship (1-3) Pre-approved supervised experience with farm or organization in the field.

Grading Restriction: Satisfactory/No Credit Grading only.

Registration Permission: Consent of instructor.
493 Independent Study (1-3) Directed individual or team research and report writing. Special courses in specific topics.  
Repeatability: May be repeated. Maximum 6 hours.  
Registration Restriction(s): Minimum student level – junior.  
Registration Permission: Consent of instructor.

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 College of Agricultural Sciences and Natural Resources experience.  
Grading Restriction: A, B, C, No Credit grading.  
Registration Restriction(s): Freshmen and sophomores 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.  
Contact Hour Distribution: 2 hours and 1 lab.

317 Agriculture and Natural Resources Honors Seminar (1) Discussion of selected topics, issues, and problems influencing national and international food, agriculture, and natural resources systems.  
Grading Restriction: A, B, C, No Credit grading.  
Repeatability: May be repeated. Maximum 4 hours.  
Registration Permission: Consent of instructor.

330 Leadership Development in Agriculture and Natural Resources (1) Enrollment limited to College Ambassadors. Readings on leadership and personal development, communication techniques, and/or personality types.  
Grading Restriction: A, B, C, No Credit grading.  
Repeatability: May be repeated. Maximum 4 hours.  
Registration Permission: Consent of instructor.

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 include basic natural resources; current practices in agriculture, forestry, and food handling; and practices related to quality of life issues, such as wildlife and landscape design.  
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 opportu-nity 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.  
Repeatability: May be repeated. Maximum 12 hours.  
Registration Permission: Consent of instructor.

481 Special Topics in Agriculture and Natural Resources (3) In-depth case study analysis of international topics related to agriculture and natural resources.

491 International Experience in Agriculture and Natural Resources (1-12) 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 opportu-nity 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.  
Repeatability: May be repeated. Maximum 12 hours.  
Registration Permission: Consent of instructor.

497 Honors: Independent Project (1-6) For students participating in the College of Agricultural Sciences and Natural Resources Honors Research and Creative Achievements Program. Consists of independent work with a faculty member.  
Repeatability: May be repeated. Maximum 6 hours.  
Registration Permission: Consent of instructor.

498 Honors Presentation (1) For students participating in the College of Agricultural Sciences and Natural Resources Honors Research and Creative Achievements Program. Final written report and oral presenta-tion of the honors project.  
Registration Permission: Consent of instructor.

Air Force Aerospace Studies (094)

101 The Air Force Today (1) Survey that focuses on the organizational structure and missions of the Air Force; officership 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.  
(PE) Corequisite(s): 103.

102 The Air Force Today (1) Survey that focuses on the organizational structure and missions of the Air Force; officership 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.  
(PE) Corequisite(s): 104.

103 Leadership Laboratory (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.  
Grading Restriction: Satisfactory/No Credit grading only.

104 Leadership Laboratory (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.  
Grading Restriction: Satisfactory/No Credit grading only.

201 The Development of Air Power (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.  
(PE) Corequisite(s): 203.

202 The Development of Air Power (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.  
(PE) Corequisite(s): 203.

301 Air Force Leadership and Management (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.  
(PE) Corequisite(s): 303.

302 Air Force Leadership and Management (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.  
(PE) Corequisite(s): 304.

303 Leadership Laboratory (0) Consists of activities classified as advanced leadership experiences. They involve planning, organizing, staffing, 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.  
Grading Restriction: Satisfactory/No Credit grading only.
401 National Security Forces in Contemporary American Society (3) Examines the need for national security, analyzes the evolution and formulation of the American defense policy, strategy, and joint doctrine; investigates the methods for managing conflict; and overviews regional security, arms control, and terrorism. Special topics of interest focus on the military as a profession, officership, the military justice system, and current issues affecting 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. 
(RE) Corequisite(s): 403.

402 National Security Forces in Contemporary American Society (3) Examines the need for national security, analyzes the evolution and formulation of the American defense policy, strategy, and joint doctrine; investigates the methods for managing conflict; and overviews regional security, arms control, and terrorism. Special topics of interest focus on the military as a profession, officership, the military justice system, and current issues affecting 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. 
(RE) Corequisite(s): 403.

403 Leadership Laboratory (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. 
Grading Restriction: Satisfactory/No Credit grading only.

404 Leadership Laboratory (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. 
Grading Restriction: Satisfactory/No Credit grading only.

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 Political Science 312.)

320 American Cultures (3) (See Anthropology 320.)

334 Film and American Culture (3) (See 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 Folklife (3) (See English 381.)

410 Topics in American Culture (3) Content varies. Repeatability: May be repeated. Maximum 6 hours.

420 Political Attitudes and Behavior (3) (See Political Science 420.)

423 Geography of American Popular Culture (3) (See Geography 423.)

442 American Humor (3) (See English 442.)

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 (1-9) Repeatability: May be repeated. Maximum 9 hours.

492 Off-Campus Study (1-9) Repeatability: May be repeated. Maximum 9 hours.

493 Independent Study (1-9) Repeatability: May be repeated. Maximum 9 hours.

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.
Contact Hour Distribution: 2 hours and 1 lab.

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.
Contact Hour Distribution: 2 hours and 1 lab. 
(RE) Prerequisite(s): Biology 130 or Biology 102.

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. (WC)
Contact Hour Distribution: 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, lunging, 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 trailer, stall maintenance, internal and external parasite control, exercising, identification techniques, routine vaccinations and first aid. Safety for both horse and handler will be emphasized.
Contact Hour Distribution: 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. (Same as Biochemistry and Cellular and Molecular Biology 320.)
Contact Hour Distribution: 2 hours and 1 lab. 
(RE) Prerequisite(s): Biology 130 or Biology 102.

330 Comparative Animal Nutrition (3) Nomenclature, structures, functions, utilization, and deficiency symptoms of essential nutrients in carnivores, omnivores and herbivores. 
(RE) Prerequisite(s): Chemistry 130 or Chemistry 110. 
(DE) Prerequisite(s): 220.

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.
Contact Hour Distribution: 2 hours and 1 lab. 
(RE) Prerequisite(s): Mathematics 125 or 151. 
(DE) Prerequisite(s): 220 and Mathematics 141.

Registration Restriction(s): Minimum student level – sophomore.

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.
Contact Hour Distribution: 2 hours and 1 lab. 
(RE) Prerequisite(s): 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, and Web-based employment search guides.

Contact Hour Distribution: 2 hours and 1 lab.  
Registration Restriction(s): Not open to animal science 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.

Registration Restriction(s): Minimum student level – junior.

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.

Contact Hour Distribution: 1 hour and 2 labs.  
(RE) Prerequisite(s): 320.  
Registration Restriction(s): Minimum student level – senior.

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 formulate complex rations with constraints.

Contact Hour Distribution: 2 hours and 1 lab.  
(RE) Prerequisite(s): 330.

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.

Contact Hour Distribution: 2 labs.  
Grading Restriction: Satisfactory/No Credit grading only.  
Registration Permission: Consent of department head.

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.

Contact Hour Distribution: 2 hours and 1 lab.  
(RE) Prerequisite(s): 330 and 380.  
(RE) Corequisite(s): 320 and 340.

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.

Credit Hour Distribution: 2 hours and 1 lab.  
(RE) Prerequisite(s): 320 and 340.  
(RE) Corequisite(s): 330 and 380.

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 programs. Management evaluated in terms of production responses and economic returns.

Credit Hour Distribution: 2 hours and 1 lab.  
(RE) Prerequisite(s): 320 and 340.  
(RE) Corequisite(s): 330 and 380.

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.

Credit Hour Distribution: 2 hours and 1 lab.  
(RE) Prerequisite(s): 320 and 340.  
(RE) Corequisite(s): 330 and 380.

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.

Contact Hour Distribution: 2 hours and 1 lab.  
(RE) Prerequisite(s): 330 and 380.  
(RE) Corequisite(s): 320 and 340.

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.

Contact Hour Distribution: 2 hours and 1 lab.  
(RE) Prerequisite(s): 330 and 380.  
(RE) Corequisite(s): 320 and 340.

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 the 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.

Repeatability: May be repeated. Maximum 6 hours.  
Registration Restriction(s): Minimum student level – sophomore.  
Registration Permission: Consent of department head.

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.

Repeatability: May be repeated. Maximum 6 hours.  
Registration Restriction(s): Minimum student level – sophomore.  
Registration Permission: Consent of department head.

494 Animal Science Teaching Assistant (1) Assist the primary instructor in laboratory instruction and demonstrations.

Grading Restriction: Satisfactory/No Credit grading only.  
Registration Restriction(s): Minimum student level – sophomore.  
Registration Permission: Consent of department head.

495 Ethics in Animal Agriculture (1) Discussion and presentations on issues related to ethics in animal research and industry.

Registration Restriction(s): Minimum student level – senior.

Anthropology (122)

110 Human Origins (3) Survey of humanity’s background, fossil primates, fossil human remains, and living races of humankind.  
(NS)  
Credit Restriction: Students may not receive credit for both 110 and 117.

(NS)  
Credit Restriction: Students may not receive credit for both 117 and 110.  
Comment(s): Same as 110 but designed for high-achieving students.

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)  
Credit Restriction: Students may not receive credit for both 120 and 127.

127 Honors: Prehistoric Archaeology (3) Honors 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)  
Credit Restriction: Students may not receive credit for both 127 and 120.  
Comment(s): Same as 120 but designed for high-achieving students.

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)  
Credit Restriction: Students may not receive credit for both 130 and 137.

137 Honors: Cultural Anthropology (3) Honors introduction to 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)  
Credit Restriction: Students may not receive credit for both 137 and 130.  
Comment(s): Same as 130 but designed for high-achieving students.

210 Principles of Biological Anthropology (3) Mechanisms of biological evolution and adaptation in living and prehistoric humans.  
(WC)  
(Re) Prerequisite(s): 110.

302 Anthropology of Religion (3) (See Religious Studies 302.)
200 COURSES OF INSTRUCTION

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. (RE) Prerequisite(s): 130.

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. (RE) Prerequisite(s): 130.

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. (RE) Prerequisite(s): 130.

313 Peoples and Cultures of Mesoamerica (3) Pre-Columbian and Hispanic cultures of Mexico, Guatemala, Belize, El Salvador and Honduras. Patterns of cultural continuity and cultural change throughout Mesoamerica’s history. Writing-emphasis course. (Same as Latin American Studies 313.) (RE) Prerequisite(s): 130.

315 The African Diaspora (3) An overview of anthropological perspectives on people of African descent and the impact of an African presence on sociocultural experiences 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. (Same as Africana Studies 315.) (RE) Prerequisite(s): 130.

316 Peoples and Cultures of South America (3) An introduction to contemporary analysis and debate on South America that places the concept of “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.) (RE) Prerequisite(s): 130.

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. (Same as Africana Studies 319.) (RE) Prerequisite(s): 130.

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.) (RE) Prerequisite(s): 130.

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. (RE) Prerequisite(s): 130.

322 Topics in U.S. Ethnography (3) Overview of culture patterns and ethnographic research on selected social groups or culture areas in the United States. Writing-emphasis course. Repeatability: May be repeated. Maximum 6 hours. (RE) Prerequisite(s): 130.

323 Topics in Latin American Ethnography (3) Overview of culture patterns and ethnographic research on selected social groups or culture areas in Latin America. Writing-emphasis course. Repeatability: May be repeated. Maximum 6 hours. (RE) Prerequisite(s): 130.

324 Topics in African Ethnography (3) Overview of culture patterns and ethnographic research on selected social groups or culture areas in Africa. Writing-emphasis course. Repeatability: May be repeated. Maximum 6 hours. (RE) Prerequisite(s): 130.

357 Junior Honors in Anthropology (3) Analytical, integrative review of current directions of research and theory in anthropology. Registration Restriction(s): Anthropology major; 3.20 GPA. (RE) Prerequisite(s): 130.

360 North American Prehistory (3) Prehistoric cultures of North America from initial occupation of the continent to European contact. Writing-emphasis course. (RE) Prerequisite(s): 120.

361 Historical Archaeology (3) Historical archaeology of Euro-American, African-American, and Asian American cultures in the United States from 15th to 20th centuries. (RE) Prerequisite(s): 120.

362 Principles of Archaeology (3) Research strategies used in developing method and theory, constructing cultural histories, identifying site function and settlement-subsistence patterns, and evaluating explanations of cultural change. (RE) Prerequisite(s): 120.

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. (RE) Prerequisite(s): 120. Recommended Background: 360.

369 Topics in Archaeology (3) Examination of selected frameworks and techniques for retrieval and analysis of archaeological materials. Repeatability: May be repeated. Maximum 6 hours. (RE) Prerequisite(s): 120.

373 African Religions (3) (See Religious Studies 373.)

400 Readings in Anthropology (1-6) Problem-oriented directed readings in anthropology. Repeatability: May be repeated. Maximum 6 hours. Registration Permission: Consent of instructor.

410 Principles of Cultural Anthropology (3) Exploration and illustration of major concepts, theories, and methods in cultural anthropology, with application to analysis of specific ethnographic cases. (RE) Prerequisite(s): 130.

411 Linguistic Anthropology (3) Basic linguistic concepts applied to research in cultural anthropology, particularly investigation of relationships between language and culture. (Same as Linguistics 411.) (RE) Prerequisite(s): 130 or Linguistics 200.

412 Folklore in Anthropology (3) Introduction to anthropological study of folklore, using folklore and folklore materials from various tribal, peasant, and complex societies. (RE) Prerequisite(s): 130.

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, ethnohistoric, and contemporary cases. (RE) Prerequisite(s): 130.

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. (RE) Prerequisite(s): 130.

415 Environmental Anthropology (3) Overview of theoretical and methodological approaches to the study of human / environmental interactions. Impacts of environmental change on society and culture; human impacts on environmental change. (RE) Prerequisite(s): 130.

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. (RE) Prerequisite(s): 130.

430 Fieldwork in Archaeology (3-9) Practicum work in archaeological data recovery and analytical techniques. Repeatability: May be repeated. Maximum 9 hours. (RE) Prerequisite(s): 120.

431 Ethnographic Research (3) Conceptual and practical exploration of methods and techniques cultural anthropologists use in fieldwork. (RE) Prerequisite(s): 130.

432 Anthropology of Warfare and Violence (3) Origins and tactics of warfare; overview of cultural foundations of warfare and structural violence; and effects on communities, social institutions, environments, and social organization. (RE) Prerequisite(s): 130.
435 Historical Archaeology Laboratory (3) Laboratory procedures for the processing, identification, and interpretation of artifacts from historical sites. Artifactual material from historic East Tennessee sites will be used for class projects.
(Re) Prerequisite(s): 120.
Recommended Background: 361.

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.

454 Archaeology of the African Diaspora (3) Historical archaeology of African, North American and Latin American sites relating to the transatlantic slave trade and the experiences of enslaved Africans in the New World from the 15th to the 19th centuries. Writing-emphasis course.
(Re) Prerequisite(s): 120 or 127.
Recommended Background: 361.

457 Senior Honors in Anthropology (3) Research and writing of the senior honors thesis.
(Re) Prerequisite(s): 357.
Comment(s): B or better in 357 and 3.50 in anthropology courses required.

459 Selected Topics in Anthropology (3) Theoretical issues in anthropology for undergraduate students. Topics may include practical experience or laboratory study of anthropological materials.
Repeatability: May be repeated. Maximum 6 hours.
Registration Permission: Consent of instructor.

461 Archaeological Resource Management (3) Federal legislation and regulations affecting identification, protection, and management of archaeological resources. Professional ethics and responsibilities and relationship of federal and state agencies, public interest groups, and professional archaeologists in conduct of federally sponsored archaeology.

462 Early European Prehistory (3) Origins and evolution of human culture in Europe. Focus on the beginnings of settled life. Primary focus on Paleolithic/Mesolithic chronology and lifeways. Writing-emphasis course.
(Re) Prerequisite(s): 120.

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.
(Re) Prerequisite(s): 120.

464 Principles of Zooarchaeology (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.
(Re) Prerequisite(s): 120.

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.
(Re) Prerequisite(s): 120.
Recommended Background: 361.

466 Archaeology of Southeastern United States (3) Archaeological research on prehistoric American Indian cultures in Southeastern United States.

480 Human Osteology (4) Intensive examination of the human skeleton. Contact Hour Distribution: 3 hours and 1 lab.
(Re) Prerequisite(s): 110.

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.
(Re) Prerequisite(s): 480.

490 Primate Evolution (3) Living and fossil primate taxonomy, ecology, and comparative anatomy. Survey of primate fossil record with emphasis on the origin or major primate lineages.
Registration Restriction(s): Anthropology major.
Registration Permission: Consent of instructor.

491 Foreign Study (1-15)
Repeatability: May be repeated. Maximum 15 hours.
Registration Permission: Consent of instructor.

492 Off-Campus Study (1-15)
Repeatability: May be repeated. Maximum 15 hours.
Registration Permission: Consent of instructor.

493 Independent Study (1-15)
Repeatability: May be repeated. Maximum 15 hours.
Registration Permission: Consent of instructor.

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.
Registration Restriction(s): Anthropology major.

495 Human Paleontology (4) Intensive survey of the human fossil record from the earliest hominid remains to the earliest origins of modern human form.
Registration Restriction(s): Anthropology major.

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. (Same as Africana Studies 496.)
Registration Restriction(s): Anthropology major.

Arabic (127)
121 Elementary Modern Standard Arabic I (4) (See Asian Studies 121.)

122 Elementary Modern Standard Arabic II (4) (See Asian Studies 122.)

221 Intermediate Modern Standard Arabic I (4) (See Asian Studies 221.) (CC)

222 Intermediate Modern Standard Arabic II (4) (See Asian Studies 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.
(Re) Corequisite(s): 171.

102 Visual Design Theory (2) Principles of visual design, addressing form and space. Exploration of visual ideas through analysis. Introduction of terminology and vocabulary.
(Re) Corequisite(s): 172.

107 Honors: Introduction to the Built Environment (3) Students will attend 101 classes with supplementary assignments and/or class meetings.
Registration Permission: Consent of architecture program director.

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. (AH)

117 Honors: Architecture and the Built Environment (3) Students will attend 111 classes, with supplementary assignments and/or class meetings. (AH)
Registration Permission: Consent of architecture program director.

121 Drawing and Perception (2) Exploration of drawing as a means of visual thinking and method of communication, addressing perceptual phenomena. Exploration of different media, concentrating on freehand drawing. Includes line drawing, tone, shade, shadow, and depth cues. Compositional principles will be introduced. Drawings based on observation, including figure drawing and campus visits.
(Re) Corequisite(s): 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.
(Re) Corequisite(s): 172.
Registration Restriction(s): Architecture major or interior design major.

172 Design Fundamentals II (4) Fundamentals of architectural design, conceiving form and space. Elements of form and space including lines, planes, volumes, voids, and mass. Spatial sequence and scale. Development of architectural representation. (RE) Prerequisite(s): 171.
(RE) Corequisite(s): 102 and 122.
Registration Restriction(s): Architecture major or interior design major.

180 Introduction to Architecture (2) Introduction to architecture as an intellectual discipline. Design as a creative endeavor central to the discipline and its profession.
Registration Restriction(s): Master of Architecture admission.

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 in major world cultures from 1500 AD to the mid-20th century. (AH)
(Re) Prerequisite(s): 211.

213 History and Theory of Contemporary Architecture (3) Architectural thought in design practice in late 20th century. Examples of contemporary works and review of theoretical issues. (WC)
(Re) Prerequisite(s): 212.

217 Honors: History and Theory of Architecture I (3) Students will attend 211 classes, with supplementary assignments and/or class meetings. (AH)
Registration Permission: Consent of architecture program director.

218 Honors: History and Theory of Architecture II (3) Students will attend 212 classes, with supplementary assignments and/or class meetings. (AH)
Registration Permission: Consent of architecture program director.

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. (Re) Prerequisite(s): 172.
Registration Restriction(s): Architecture major or interior design major.

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. (Re) Prerequisite(s): Physics 161.
Registration Restriction(s): Architecture major.

271 Architectural Design I (6) Introduction to contextual determinants in architectural design. Role of the city and the landscape in architectural design. Methods of analyzing place and form in determining design strategies. Representational skills developed including drawing, diagramming and modeling techniques. (Re) Prerequisite(s): 172 and 211.
(De) Prerequisite(s): Mathematics 125.
Registration Restriction(s): Architecture major; 2.30 GPA.

272 Architectural Design II (6) Studies in architectural space. The role of function, habitation, movement, structure and scale as determinants of spatial forms 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. (Re) Prerequisite(s): 271 and 212.

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. Contact Hour Distribution: 1-hour seminar and 5 hours studio.
(Re) Prerequisite(s): 172.
Registration Restriction(s): Master of Architecture admission.

282 Principles of Architectural Design (6) Principles of architectural design emphasizing site, function, circulation, structure, technology, context and expression of building. Contact Hour Distribution: 1-hour seminar and 5 hours studio.
(Re) Prerequisite(s): 281.

312 Materials and Methods of Construction (3) Properties of interior and exterior building materials and their relation to construction methods and detailing. Theory of material selection and application and the role materials and methods play in the design process. (Re) Prerequisite(s): 232.

331 Architectural Structures I (4) Structural properties of building materials under loading and stress. Mechanics of foundations, properties of cross-sections of structural members and analysis of statically determinate trusses, beams, columns, and simple assemblies. (QR)
(Re) Prerequisite(s): 231 and 232.

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, and selection of structural members. (Re) Prerequisite(s): 331.

335 Structures in Architecture I (3) Introduction to the structural properties of materials, foundations and simple statically determinant assemblies of buildings.
Registration Restriction(s): Master of Architecture admission.

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. (Re) Prerequisite(s): 335.
Registration Restriction(s): Master of Architecture admission.

341 Environmental Control Systems I (4) Heating, ventilating, and air conditioning systems, including passive and active solar energy systems. Plumbing and fire protection systems. (Re) Prerequisite(s): 231 and 232.


346 Principles of Environmental Control II (3) Introduction to electrical design and wiring, lighting and acoustics in buildings.
Registration Restriction(s): Master of Architecture admission.

371 Architectural Design III (6) Design synthesis. Integration of design determinants and development of building concepts. (Re) Prerequisite(s): 272 and 213.
Comment(s): A minimum 2.30 GPA in all design courses is required.

372 Architectural Design IV (6) Design synthesis. Integration of design determinants, structure, environmental controls, materials and construction. (Re) Prerequisite(s): 371.
Comment(s): A minimum 2.30 GPA in all design courses is required.

401 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.
Registration Restriction(s): Master of Architecture admission.

402 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.
Registration Restriction(s): Master of Architecture admission.

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.

406 Ideas in Architecture (3) Historical and critical review of the major ideas of architecture through the ages.

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.

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-20th century. (RE) Prerequisite(s): 212 or 402.

425 Special Topics in Architecture (1-6) Faculty-initiated courses. Topics vary. Repeatability: May be repeated. Maximum 12 hours. Registration Restriction(s): Architecture major or interior design major.

431 Structural and Mechanical Applications (3) Case study analysis of structure and mechanical systems, investigating the conceptual integration of technical information into a unified design solution. (RE) Prerequisite(s): 322 and 342. (RE) Corequisite(s): 471.

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. (RE) Prerequisite(s): 231.

434 Visual Thinking in Digital Media (3) Emphasizes form, content, and structure of images moving in time and applications in architecture. Focus is on use of time-based digital media as an analytical tool for clarifying ideas, making observations, and experimentation. Advanced understanding of 2D and 3D digital animation, video editing, and digital audio. (RE) Prerequisite(s): 231.

435 Presentation Design I (3) Basic techniques and understanding of graphic presentation design within the profession of architecture. Addresses fundamental design principles, page layout, image manipulation, and typography, employing computer software applications. Conducted through lectures, assigned projects, assigned readings, labs, exams and/or critiques. (RE) Prerequisite(s): 231.

436 Presentation Design II (3) Advanced techniques and understanding of graphic presentation design within the profession of architecture. Addresses document design, layout and binding, image manipulation, and typography, employing computer software applications. Conducted through lectures, assigned projects, assigned readings, labs, exams and/or critiques. (RE) Prerequisite(s): 435.

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. (RE) Prerequisite(s): 471.

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.

471 Architectural Design V (6) Design project from conceptual through design development phase. Specification of component building systems including structure, mechanical, lighting and construction details. (RE) Prerequisite(s): 372. (RE) Corequisite(s): 431. Comment(s): Minimum 2.30 GPA in all design courses is required.

472 Architectural Design VI (6) Order and form in complex buildings developed to address programmatic, structural, energy and environmental issues. (RE) Prerequisite(s): 471. Comment(s): Minimum 2.30 GPA in all design courses is required.

473 Architectural Photography (3) Photography as a design, research, and presentation medium. Application of photographic techniques, printing and processing. Color, black and white. Registration Restriction(s): Architecture major or interior design major.

477 Honors: Independent Study in Architecture (1-6) Individual studies and projects under faculty direction, for honors students only. Credit adjusted to complexity and level of effort required. Repeatability: May be repeated. Maximum 12 hours. Registration Permission: Consent of architecture program director.

480 Programming for Architectural Design VII (3) Faculty-initiated design topic with leeway for interpretation by students. Understanding of programming and project pre-design processes through lectures, readings and preparation of studio project statement. Programming issues clarified and project concepts set forth. Documentation, research, and analysis of program, site, and precedents. Formation of project statement including site documentation, analysis and programming. Combination lecture, seminar, and studio format. First half-semester course. (RE) Prerequisite(s): 471. (RE) Corequisite(s): 481.

481 Architectural Design VII (3) Execution of design project as defined in Architecture 480. Faculty-initiated design topic with leeway for student interpretation. Completed projects will address issues of program and site, as identified in Architecture 480. Second half-semester course. (RE) Prerequisite(s): 471. (RE) Corequisite(s): 480. Comment: Successful completion of 480 with grade of C or better. Minimum 2.30 GPA in all design courses is required.

482 Self-Directed Design Project (6) Student-selected project under faculty direction. Formation of project statement, documentation, and analysis of site, program, and precedents. Exploration of design hypothesis that informs the character of a substantial building design. (RE) Prerequisite(s): 480 and 481. Comment(s): Minimum 2.30 GPA in all design courses is required. Registration Permission: Consent of instructor through project approval process.

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. (RE) Prerequisite(s): 471. Comment(s): Minimum 2.30 GPA in all design courses is required.

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. (RE) Prerequisite(s): 471 and 463. Comment(s): Minimum 2.30 GPA in all design courses is required.

486 Design of Sustainable Architecture (6) Architectural design studio emphasizing concern for the environment, consideration of energy conservation techniques, and use of renewable resources. (RE) Prerequisite(s): 486. Comment(s): Minimum 2.30 GPA in all design courses is required.

489 Structural Innovations (6) Building design with innovative structural configuration and technology. Exploration of new materials, detailing, and methods in building construction. (RE) Prerequisite(s): 471. Comment(s): Minimum 2.30 GPA in all design courses is required.

491 Foreign Study (1-15) Research and design projects conducted in various locations abroad. Repeatability: May be repeated. Maximum 15 hours. Registration Permission: Consent of architecture program director.

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. Repeatability: May be repeated. Maximum 15 hours. Credit Restriction: Not a design course elective. Registration Permission: Consent of architecture program director.

493 Independent Study in Architecture (1-6) Individual studies and projects under faculty direction. Credit adjusted to complexity and level of effort required. Repeatability: May be repeated. Maximum 12 hours. Registration Permission: Consent of architecture program director.


Art (140)

101 Introduction to Studio Art I (3) A thematic introduction to visual literacy, basic art theory, inter-media technique, and material focusing on formal understanding through verbal, written, and experiential exercise.

102 Introduction to 4-D Studio Art (3) A thematic introduction to visual literacy, basic art theory, and technique in 4-D art through verbal, written, and experiential exercise.

103 Introduction to Studio Art II (3) A thematic introduction to visual literacy, basic art theory, inter-media technique, and material focusing on conceptual understanding through verbal, written, and experiential exercise. (RE) Prerequisite(s): 101.

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.
201 Arrowmont Special Topics (1-2) Various media.
Grading Restriction: Satisfactory/No Credit grading only.
Repeatability: May be repeated. Maximum 12 hours.

299 Special Topics (3) Student- or instructor-initiated course offered at convenience of department.
Repeatability: May be repeated. Maximum 12 hours.

301 Student Exhibition (1) Exhibition of student work, including off-campus venues, e.g. Gallery 1010.
Grading Restriction: Satisfactory/No Credit grading only.
Repeatability: May be repeated. Maximum 2 hours.
Registration Permission: Consent of instructor.

481 Museum Studies I: Museums, Purpose and Function (3)
Purpose, 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, mounting and framing, shipping and storage. (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. (Same as Anthropology 484.)
Repeatability: May be repeated. Maximum 12 hours.

491 Foreign Study (1-6)
Repeatability: May be repeated. Maximum 12 hours.

492 Off-Campus Study (1-6)
Repeatability: May be repeated. Maximum 12 hours.

493 Independent Study (1-3)
Repeatability: May be repeated. Maximum 15 hours.

494 Individual Problems (3)
Repeatability: 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.
Credit Restriction: Not to be applied toward the art history requirement.

499 Special Topics (3) Student- or instructor-initiated course offered at convenience of department.
Repeatability: May be repeated. Maximum 12 hours.

Art Ceramics (135)

191 Introduction to Studio Art: Various Media (3) Individual sections for various artistic disciplines.
Registration Restriction(s): Non-majors only (not for BA and BFA – studio art majors and BFA – graphic design majors).

221 Ceramics: Handbuilding I (3) Introduction to handbuilding, glazing, clay preparation, and firing.
Repeatability: May be repeated. Maximum 6 hours.

222 Ceramics: Throwing I (3) Introduction to throwing, glazing, clay preparation, and firing.
Repeatability: May be repeated. Maximum 6 hours.

225 Portfolio Practicum – Handbuilding (3) Intense post-introductory studio experience to develop work for application to 320 (Ceramics: Portfolio Review).
Registration Restriction(s): Studio art majors only.
Registration Permission: Consent of department.

226 Portfolio Practicum – Throwing (3) Intense post-introductory studio experience to develop work for application to 320 (Ceramics: Portfolio Review).
Registration Restriction(s): Studio art majors only.
Registration Permission: Consent of department.

229 Ceramics: Special Topics (3) Student- or instructor-initiated courses to be offered at convenience of department.
Repeatability: May be repeated. Maximum 12 hours.
Registration Permission: Consent of instructor.

320 Ceramics: Portfolio Review (0) Review of prior work in ceramics.
Grading Restriction: Satisfactory/No Credit grading only.
Repeatability: May be repeated once.
(De) Corequisite(s): 221, 222, and Art Sculpture 240.
Comment(s): Successful completion required prior to registration for junior and senior courses.

321 Ceramics: Handbuilding II (4) Continued investigation of handbuilding with an emphasis on the development of individual ideas and expression.
(Re) Prerequisite(s): 320.

322 Ceramics: Throwing II (4) Continued investigation of throwing with an emphasis on the development of individual ideas and expression.
(Re) Prerequisite(s): 320.

421 Ceramics: Advanced Handbuilding (6) Continued investigation of ceramic form with an emphasis on the development of individual direction.
Repeatability: May be repeated. Maximum 18 hours.
(Re) Prerequisite(s): 321 and 322.

422 Ceramics: Advanced Throwing (6) Continued, in-depth investigation of ceramic form with an emphasis on the development of individual direction.
Repeatability: May be repeated. Maximum 18 hours.
(Re) Prerequisite(s): 321 and 322.

424 Ceramics: Clays and Glazes (3) Clay chemistry, clay bodies, glaze theory, and calculation. Formulating, mixing, and testing of clay bodies and glaze formulas.
(Re) Prerequisite(s): 320.

429 Ceramics: Special Topics (3) Student- or instructor-initiated courses to be offered at convenience of department.
Repeatability: May be repeated. Maximum 12 hours.
(Re) Prerequisite(s): 320.

493 Independent Study (1-4)
Repeatability: May be repeated. Maximum 15 hours.
Registration Permission: Consent of instructor.

494 Individual Problems (3)
Repeatability: May be repeated. Maximum 12 hours.
Registration Permission: Consent of instructor.

495 Visiting Artist Seminar (2) Study and discussion of contemporary art issues conducted by different visiting artists each semester.
Repeatability: May be repeated. Maximum 8 hours.
Credit Restriction: Not to be applied toward the art history requirement.

499 Special Topics (3) Student- or instructor-initiated course offered at convenience of department.
Repeatability: May be repeated. Maximum 12 hours.

Art Design/Graphic (136)

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.
Repeatability: May be repeated. Maximum 6 hours.
(Re) Prerequisite(s): Art 101 and Art 103.

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.
Repeatability: May be repeated. Maximum 6 hours.
(Re) Prerequisite(s): 251.

256 Individual Projects in Graphic Design (3)
Repeatability: May be repeated. Maximum 6 hours.
Registration Permission: Consent of instructor.

259 Special Topics: Graphic Design (3) Student- or instructor-initiated course offered at discretion of department.
Repeatability: May be repeated. Maximum 12 hours.
Comment(s): Prerequisite(s) determined by department for individual topic.

350 Graphic Design Portfolio Review (0) Review of prior work in graphic design.
Grading Restriction: Satisfactory/No Credit grading only.
Repeatability: May be repeated once.
(Re) Prerequisite(s): 251.
Comment(s): Successful completion required prior to registration for junior and senior courses. Successful completion of the General Education Culture and Civilizations Option 2 (completing a 2-course sequence in a foreign language at the intermediate level) required.

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.
(Re) Prerequisite(s): 350.

352 Intermediate Graphic Design II (3) Investigation of sign, symbols, marks, and identity systems.
(Re) Prerequisite(s): 351.

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.
(De) Corequisite(s): 351.

400 Typography (3) Principles of typography, as well as classical and contemporary type forms, as vehicles for communication. An intensive introduction to the fundamentals of type, from individual letterforms to large bodies of textual information. Attention to formal, technological, and historical issues.
(De) Prerequisite(s): Art 295 and Art Design/Graphic 251.
405 Computer Enhanced Graphic Design (3) Exploration of new technologies and their significance to graphic design.
(RE) Repeatable: May be repeated. Maximum 12 hours.
(RE) Corequisite(s): 351 and 356.

410 Advanced Typographic Investigation (3) Expands on principles introduced in Typography (Art Design/Graphic 400). Projects will include work in reflective as well as electronic environments with an emphasis on personal exploration.
(DE) Prerequisite(s): 400.

425 Illustration (3) Develops skills and critical analysis for effective visual communication. Projects will explore the relationship between image and meaning. Students will explore a variety of media as they develop a personal visual vocabulary.
Repeatable: May be repeated. Maximum 6 hours.
(DE) Prerequisite(s): Art 295 and Art Design/Graphic 251.

444 Graphic Design Center Practicum (3) Practical work experience in a student-managed, on-site studio.
Repeatable: May be repeated. Maximum 6 hours.
Registration Permission: Consent of instructor.

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. 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.
(RE) Prerequisite(s): 352.

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. (OC)
(RE) Prerequisite(s): 451.

455 Graphic Design Professional Seminar (3) Professional practices including client relationships, design management, and business practices. Assembly, organization, and editing of the professional portfolio.
(RE) Corequisite(s): 452.

456 Graphic Design Practicum (1-12) Practical work experience in the graphic design field. Must be pre-arranged with the department.
Repeatable: May be repeated. Maximum 12 hours.
(RE) Prerequisite(s): 351 and 356.

459 Special Topics in Graphic Design (3) Student- or instructor-initiated course offered at discretion of department.
Repeatable: May be repeated. Maximum 12 hours.
Registration Permission: Consent of instructor.

493 Independent Study (1-6) Repeatable: May be repeated. Maximum 15 hours.
Registration Permission: Consent of instructor.

494 Individual Problems (3) Repeatable: May be repeated. Maximum 12 hours.
Registration Permission: Consent of instructor.

495 Visiting Artist Seminar (2) Study and discussion of contemporary art issues conducted by different visiting artists each semester.
Repeatable: May be repeated. Maximum 8 hours.
Credit Restriction: May not be applied toward the art history requirement.

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.
Registration Permission: Consent of instructor.

303 Concepts of Sculpture and Crafts (3) Processes in teaching of sculpture and crafts including pertinent literature and research.
(RE) Prerequisite(s): 301.

350 Field Experience (1) Tasks related to teaching and to teacher roles.
Grading Restriction: Satisfactory/No Credit grading only.
Repeatable: May be repeated. Maximum 2 hours.
Registration Restriction(s): Qualification – admission to teacher education.

400 Curriculum Planning and Teaching Strategies (3) Program development, instructional methods, professional literature, contemporary issues, simulation and micro teaching situations.
(RE) Prerequisite(s): 301.
Registration Restriction(s): Qualification – admission to teacher education.

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 Africana 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. (AH)
Contact Hour Distribution: 2-hour lecture and 1-hour discussion each week.

173 Western Art II (3) Major monuments in the history of European and American art from the Renaissance to the present. (AH)
Contact Hour Distribution: 2-hour lecture and 1-hour discussion each week.

177 Honors: Western Art I (3) Consent of Department required. Major monuments in western art with emphasis on Europe from prehistory through the Middle Ages. Study grounded in reading, writing, and discussion. Writing-emphasis course. (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. Repeatability: 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. Writing-emphasis course. (WC) Repeatability: May be repeated with consent of instructor. Maximum 6 hours. Recommended Background: 12 hours of art history courses.

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) 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) 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 19th century through the present. Hong Kong, Taiwanese, and expatriate artists are also considered. Writing-emphasis course.

419 Art of Japan (3) Survey of the art and architecture of Japan from the Neolithic period to the 20th century. The major achievements of each period are examined in relation to their religious, political, and social contexts. Writing-emphasis course.

425 Early Christian and Byzantine Art to 1350 (3) Art in Italy and the Eastern Empire from the beginnings of Christian art to c. 1350. Mosaic and painting, sculpture and architecture. Writing-emphasis course. (Same as Judaic Studies 425.)

431 Medieval Art of the West, 800-1400 (3) Western European art of the Dark Ages, Romanesque, and Gothic periods. Writing-emphasis course. (Same as 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 Dürer; 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. (RE) Prerequisite(s): 172 and 173.

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 Africana 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 BC 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 Africana 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 Africana Studies 463.)

464 Oceanic Art (3) Concentrated study of selected sculpture, textiles, architecture and other traditional art forms of Polynesia, Micronesia, and Melanesia. Objects are discussed on the basis of style, style relationship, iconography and the uses to which they were put in their traditional religious, political, and social contexts. Writing-emphasis course.

470 African-American Art (3) Traces the artistic and social legacy of African-American art from the eighteenth century to the present day. Specifically, this class will focus on the ways in which artists used creativity to confront, deny, or complicate understandings of racial identity and racism. Examines broad scope of artistic production including painting, sculpture, photography, multimedia, fiction writing, and video art. Writing-emphasis course. (Same as Africana Studies 470.)

472 History of 20th-Century American Art (3) Developments in architecture, painting, and design from 1900. Writing-emphasis course.

473 19th-Century American Art (3) Examines painting, sculpture, and print culture from the Revolutionary War to the turn of the 20th century. 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. (RE) Prerequisite(s): 172 and 173.


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. Repeatability: May be repeated. Maximum 12 hours.

489 Studies in Art History (3) Concentration in individually selected area. Repeatability: May be repeated. Maximum 6 hours. Registration Permission: Consent of instructor.

493 Independent Study (1-3) Repeatability: May be repeated. Maximum 9 hours. Registration Permission: Consent of instructor.

494 Individual Problems (3) Repeatability: May be repeated. Maximum 12 hours. Registration Permission: Consent of instructor.

Art Media Arts (134)

191 Introduction to Studio Art: Various Media (3) Individual sections for various artistic disciplines. Repeatability: Course may be repeated. Medium may not be repeated. Maximum 12 hours. Registration Restriction(s): Non-majors only (not for BA and BFA – studio art majors and BFA – graphic design majors).

231 Photography I (3) Art of black and white photography. Field and studio shooting, history of photography, basic developing, and enlarging techniques.
235 Introduction to Cinematography as Art (3) Development of basic concepts and techniques for the creation of film as an art form. (Same as Cinema Studies 235.)

236 Introduction to Video Art (3) Development of basic concepts and techniques for the creation of video works as an art form. (Same as Cinema Studies 236.)

239 Special Topics in Media Arts (3) Student- or instructor-initiated course offered at convenience of department.

330 Media Arts Portfolio Review (0) Review of prior work in media arts.

331 Photography II (4) Individual expression in photographic medium.

341 Digital Photography I (4) Studio course introducing theory and techniques of use of computers in photography.

342 Large Format Photography I (4) Studio course introducing theory and practice of photography using large format view camera.

430 Photography III (3-6) Individual development of photographic problems and techniques.

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. (Same as Cinema Studies 433.)

435 Cinematography as Art (4) Continued development of concepts and techniques for the creation of film as an art form with an emphasis on individual projects. (Same as Cinema Studies 435.)

436 Video Art (4) Continued development of concepts and techniques for the creation of video works as an art form with an emphasis on individual projects. (Same as Cinema Studies 436.)

439 Special Topics in Media Arts (3) Student- or instructor-initiated course offered at convenience of department.

450 Senior Project (4) Students will engage in self-initiated productions to demonstrate proficiency in media art.

493 Independent Study (1-4) Repeatability: May be repeated. Maximum 15 hours.

494 Individual Problems (3) Repeatability: May be repeated. Maximum 12 hours.

495 Visiting Artist Seminar (3) Study and discussion of contemporary art issues conducted by different visiting artists each semester.

Art Painting (138)

191 Introduction to Studio Art: Various Media (3) Individual sections for various artistic disciplines.

213 Painting I: Introduction (3) Capacities of oil and acrylic painting on canvas.

214 Painting II (3) Techniques of expression in oil and/or acrylic.

215 Watercolor I: Introduction (3) Capacities of transparent watercolor. (RE) Prerequisite(s): Art 101 and 103.

216 Watercolor II (3) Capacities of transparent watercolor with attention to individual exploration of surface, space, and concept. (RE) Prerequisite(s): 215.

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.

313 Painting III (4) Individual expression with varied media on canvas.

314 Painting Portfolio Review (0) Review of prior work in painting.

315 Watercolor III (4) Individual expression with varied water-based media on paper.

316 Watercolor Portfolio Review (0) Review of prior work in watercolor.

413 Painting IV (6) Advanced painting stressing individual concepts and personal expression with varied media.

415 Watercolor IV (6) Advanced painting with water-based media on paper stressing individual concepts and personal approaches.

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.

493 Independent Study (1-6) Repeatability: May be repeated. Maximum 15 hours.

494 Individual Problems (3) Repeatability: 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.

Art Printmaking (132)

262 Intaglio I (3) Metal plate intaglio printing in traditional and contemporary techniques of etching, softground, drypoint, aquatint, and color methods.

263 Lithography I (3) Stone and aluminum plate lithography applying traditional and contemporary techniques of crayon, tusche, transfer methods, state proofs, and photolithography.

264 Screen Printing I (3) Screen printing as a fine art medium including development and application of various basic stencils in compositional printing.
265 Relief (3) Relief printing in traditional and contemporary techniques from wood, linoleum and plastics.
(De Prerequisite(s): Art 101 and Art 103.

266 Monoprint and Monotype (3) Investigation of traditional and contemporary techniques.
(De Prerequisite(s): Art 101 and Art 103.

269 Special Topics in Printmaking (3) Student- or instructor-initiated course offered at convenience of department.
Repeatability: May be repeated. Maximum 12 hours.
(De Prerequisite(s): Art 101 and Art 103.

291 Papermaking Workshop (3) Papermaking as a medium for two- and three-dimensional art. Includes sheet forming, imbedding, laminating, embossing, pulp dyeing, inlaying, casting, and other related techniques. Emphasis on development of a personal form.
(De Prerequisite(s): Art 101 and Art 103.

360 Printmaking Portfolio Review (0) Review of prior work in printmaking.
Grading Restriction: Satisfactory/No Credit grading only.
Repeatability: May be repeated. Maximum 12 hours.
(Re Prerequisite(s): Art 101 and Art 103.
(Re Corequisite(s): Art History 172 or Art History 173.
Comment(s): Successful completion required prior to registration for junior and senior courses.

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 photo-print processes.
Repeatability: May be repeated. Maximum 12 hours.
(Re Prerequisite(s): 282 or 263.

461 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 photo-print processes.
Repeatability: May be repeated. Maximum 12 hours.
(Re Prerequisite(s): 381.

469 Special Topics in Printmaking (3-6) Student- or instructor-initiated course offered at convenience of department.
Repeatability: May be repeated. Maximum 12 hours.
Registration Permission: Consent of instructor.

493 Independent Study (1-4)
Repeatability: May be repeated. Maximum 15 hours.
Registration Permission: Consent of instructor.

494 Individual Problems (3)
Repeatability: May be repeated. Maximum 12 hours.
Registration Permission: Consent of instructor.

495 Visiting Artist Seminar (2) Study and discussion of contemporary art issues conducted by different visiting artists each semester.
Repeatability: May be repeated. Maximum 8 hours.
Credit Restriction: May not be applied toward the art history requirement.
Registration Permission: Consent of instructor.

Art Sculpture (143)

191 Introduction to Studio Art: Various Media (3) Individual sections for various artistic disciplines.
Repeatability: Course may be repeated. Medium may not be repeated.
Maximum 12 hours.
Registration Restriction(s): Non-majors only (not for BA and BFA – studio art majors and BFA – graphic design majors).

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.
(Re Prerequisite(s): 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.
(Re Prerequisite(s): Art 103.

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.
(Re Prerequisite(s): 241.
(Re Corequisite(s): 240.

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.
(Re Prerequisite(s): 241.
(Re Corequisite(s): 240.

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.
(Re Prerequisite(s): Art 103.

249 Special Topics in Sculpture (3) Instructor-initiated course offered at convenience of department.
Repeatability: May be repeated. Maximum 12 hours.
(Re Prerequisite(s): Art 101 and Art 103.

340 Sculpture Portfolio Review (0) Review of prior work in sculpture and development of new work.
Grading Restriction: Satisfactory/No Credit grading only.
Repeatability: May be repeated once.
(Re Prerequisite(s): 240 and 241.
(Re Prerequisite(s): Art History 172, 173, 162, 163 (choice of two).
Comment(s): Successful completion required prior to registration for junior and senior courses.

341 Intermediate Sculpture (3) Students begin defining and developing their visual vocabulary relative to contemporary sculptural issues. Emphasis on studio projects, research, and discussion.
Repeatability: May be repeated. Maximum 6 hours.
(Re Prerequisite(s): 240 and 241.
(Re Prerequisite(s): 245, 246, and 340.

343 Advanced Mold-Making and Casting (3) Further exploration of casting methods with an emphasis on metals including bronze and aluminum.
(Re Prerequisite(s): 340.

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.
(Re Prerequisite(s): 240 and 241.
(De Prerequisite(s): 340.

346 Advanced Mixed Media Sculpture (3) Advanced investigation into the sculptural possibilities of installation art, performance, and multi-media. Contemporary issues are examined through research and studio projects.
(Re Prerequisite(s): 241 and 246.
(De Prerequisite(s): 340.

441 Advanced Sculpture (3) Individual development of sculptural problems and techniques. Students work independently while participating in group projects, critique, and discussion.
Repeatability: May be repeated. Maximum 12 hours.
Recommended Background: 6 hours of 300-level sculpture courses.

442 Senior Seminar (2) Investigation of professional practices and career opportunities in the field of sculpture. Includes portfolio development, preparation for exhibitions, and public commissions.

449 Special Topics in Sculpture (3) Student- or instructor-initiated course offered at convenience of department.
Repeatability: May be repeated. Maximum 12 hours.
Comment(s): Successful completion of any portfolio review required.

493 Independent Study (1-4)
Repeatability: May be repeated. Maximum 15 hours.
Registration Permission: Consent of instructor.

494 Individual Problems (3)
Repeatability: May be repeated. Maximum 12 hours.
Registration Permission: Consent of instructor.

495 Visiting Artist Seminar (2) Study and discussion of contemporary art issues conducted by different visiting artists each semester.
Repeatability: May be repeated. Maximum 8 hours.
Credit Restriction: May not be applied toward the art history requirement.
Registration Permission: Consent of instructor.

Asian Languages (144)

131 Elementary Chinese I (5) (Same as Chinese 131.)

132 Elementary Chinese II (5) (Same as Chinese 132.)
(Re Prerequisite(s): 131.

151 Elementary Japanese I (5) (Same as Japanese 151.)

152 Elementary Japanese II (5) (Same as Japanese 152.)
(Re Prerequisite(s): 151.

231 Intermediate Chinese I (5) (Same as Chinese 231.) (CC)
(Re Prerequisite(s): 132.

232 Intermediate Chinese II (5) (Same as Chinese 232.) (CC)
(Re Prerequisite(s): 231.)
251 Intermediate Japanese I (5) (Same as Japanese 251.) (CC) (RE) Prerequisite(s): 125.

252 Intermediate Japanese II (5) (Same as Japanese 252.) (CC) (RE) Prerequisite(s): 251.

311 Chinese Literature in English Translation (3) Classical literature. Writing-emphasis course. (Same as Chinese 311.)

312 Chinese Literature in English Translation (3) Vernacular and modern literature. Writing-emphasis course. (Same as Chinese 312.)

313 Japanese Literature in English Translation (3) Classical and modern literature. Writing-emphasis course. (Same as Japanese 313.)

314 Japanese Literature in English Translation (3) Modern – masterpieces of fiction since 1868. Writing-emphasis course. (Same as Japanese 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.)

321 Japanese Graphic Novels and Animation (3) Reading and analysis of major contemporary Japanese graphic novels with special attention to related works of film and television animation. All readings are in English translation. Writing-emphasis course. (Same as Japanese Studies 321.)

331 Advanced Chinese I (4) (Same as Chinese 331.) (RE) Prerequisite(s): 232.

332 Advanced Chinese II (4) (Same as Chinese 332.) (RE) Prerequisite(s): 331.

351 Advanced Japanese I (4) Includes conversation, drill, and composition practice with native speaker, as well as writing and translation. (Same as Japanese 351.) (RE) Prerequisite(s): 252.

352 Advanced Japanese II (4) Includes conversation, drill, and composition practice with native speaker, as well as writing and translation. (Same as Japanese 352.) (RE) Prerequisite(s): 351.

413 Topics in Japanese Literature (3) In English with readings in Japanese for minors. Writing-emphasis course. (Same as Japanese 413.) Repeatability: May be repeated. Maximum 15 hours.

431 Readings in Chinese Literature (3) (Same as Chinese 431.) Repeatability: May be repeated. Maximum 9 hours. (RE) Prerequisite(s): 232.

451 Readings in Pre-Modern Japanese Literature (3) (Same as Japanese 451.) (RE) Prerequisite(s): 252.

452 Readings in Modern Japanese Literature (3) (Same as Japanese 452.) (RE) Prerequisite(s): 252.

490 Chinese and Japanese Internship (1-15) Career-related experiences in the United States or abroad. Grading Restriction: Satisfactory/No Credit grading only. Repeatability: May be repeated. Maximum 15 hours. Registration Restriction(s): Language and world business (Japanese) concentration or language and world business (Chinese) concentration.

491 Chinese and Japanese Foreign Study (1-15) Repeatability: May be repeated. Maximum 15 hours.

Asian Studies (145)

101 Asian Civilization (3) Comparative study of development of religion, social institutions, and high culture in India and the Islamic World. Writing-emphasis course. (CC)

102 Asian Civilization (3) Comparative study of development of religion, social institutions, and high culture in China and Japan. Writing-emphasis course. (CC)

121 Elementary Modern Standard Arabic I (4) Taped language program. (Same as Arabic 121.)

122 Elementary Modern Standard Arabic II (4) Taped language program. (Same as Arabic 122.) (RE) Prerequisite(s): 121.

141 Elementary Modern Hebrew I (4) Taped language program. (Same as Hebrew 141.)

142 Elementary Modern Hebrew II (4) Taped language program. (Same as Hebrew 142.) (RE) Prerequisite(s): 141.

161 Elementary Persian I (4) Taped language program. (Same as Persian 161.)

162 Elementary Persian II (4) Taped language program. (Same as Persian 162.) (RE) Prerequisite(s): 161.

221 Intermediate Modern Standard Arabic I (4) Taped language program. (Same as Arabic 221.) (CC)

222 Intermediate Modern Standard Arabic II (4) Taped language program. (Same as Arabic 222.) (CC) (RE) Prerequisite(s): 221.

241 Intermediate Modern Hebrew I (4) Taped language program. (Same as Hebrew 241.) (CC)

242 Intermediate Modern Hebrew II (4) Taped language program. (Same as Hebrew 242.) (CC) (RE) Prerequisite(s): 241.

261 Intermediate Persian I (4) Taped language program. (Same as Persian 261.) (CC)

262 Intermediate Persian II (4) Taped language program. (Same as Persian 262.) (CC) (RE) Prerequisite(s): 261.

332 Classical Islam (3) (See Religious Studies 332.)

333 Islam in the Modern World (3) (See Religious Studies 333.)

374 Geography of East Asia (3) (See Geography 374.)

471 Selected Topics in Asian Studies (3) Content varies. Repeatability: May be repeated. Maximum 9 hours.

491 Foreign Study (1-5) Repeatability: May be repeated. Maximum 5 hours.

492 Off-Campus Study (1-5) Repeatability: May be repeated. Maximum 5 hours.

493 Independent Study (1-5) Repeatability: May be repeated. Maximum 5 hours.

Astronomy (150)

151 A Journey through the Solar System (3) 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. (NS) Credit Restriction: Only one of the three courses (151, 161, or 217) may be taken for credit.

152 Stars, Galaxies, and Cosmology (3) Life and death of stars, exo- nomic 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. (NS) Credit Restriction: Only one of the three courses (152, 162, or 218) may be taken for credit.

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. (NS) Credit Restriction: Only one of the three courses (151, 161, or 217) may be taken for credit.

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 the laboratory. (NS) Credit Restriction: Only one of the three courses (152, 162, or 218) may be taken for credit.
217 Honors: Introductory Astronomy (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. The 217-218 sequence satisfies the College of Arts and Sciences’ requirement for a natural science with laboratory. (NS)

Contact Hour Distribution: 3 hours lecture and 2 hours lab.

Credit Restriction: Credit given for only one sequence for lower-division astronomy.

(Re) Corequisite(s): Mathematics 141 or Mathematics 130.

218 Honors: Introductory Astronomy (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. The 217-218 sequence satisfies the College of Arts and Sciences’ requirement for a natural science with laboratory. (NS)

Contact Hour Distribution: 3 hours lecture and 2 hours lab.

Credit Restriction: Credit given for only one sequence for lower-division astronomy.

(Re) Corequisite(s): Mathematics 141 or Mathematics 130.

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 credit toward the physics major.

(Re) Prerequisite(s): Physics 136 or Physics 138.

(De) Prerequisite(s): Physics 222 or 232.

Registration Permission: Consent of instructor.

490 Special Topics in Astronomy (1-3) Topics of current interest in astronomy and astrophysics.

Repeatable: 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.

(Re) Corequisite(s): 305.

303 Introduction to Hearing Science (3) Introduction to disorders of hearing. Fundamental aspects of auditory anatomy and physiology.

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.

(Re) Prerequisite(s): 305.

320 Speech and Language Development (3) Speech and language development in the normal child.


(Re) Prerequisite(s): 300.

433 Observation of Clinical Practice (1)

(Re) Prerequisite(s): 300 and 320.

434 Clinical Practice in Speech-Language Pathology II (1-4)

Repeatable: May be repeated. Maximum 4 hours.

(Re) Prerequisite(s): 433.

Comment(s): Enrollment for fewer than 2 semester hours must have prior departmental approval.

435 Introduction to Speech Sound Disorders (3) Etiology, diagnosis, and treatment of articulatory and phonological disorders.

(Re) Prerequisite(s): 300 and 305.


(Re) Prerequisite(s): 300 and 306.

445 Clinical Practice in Audiology (1-4)

Repeatable: May be repeated. Maximum 6 hours.

(Re) Prerequisite(s): 473 and 494.

455 Problems in Speech Pathology (1-3)

Repeatable: May be repeated. Maximum 6 hours.

Registration Permission: Consent of instructor.

Biochemistry and Cellular and Molecular Biology (188)

230 Human Physiology (5) Fundamentals of human physiology, primarily from the perspective of cellular and organ-system interactions.

Contact Hour Distribution: 4 hours and 1 lab.

Credit Restriction(s): May not be applied toward the biochemistry and cellular and molecular biology concentration.

(Re) Prerequisite(s): Chemistry 110 or Chemistry 130.

306 Genetics and Society (3) Introduction to genetics, anthropology, and evolution with emphasis on their implications for human society.

(Same as Anthropology 304.)

310 Physiological Chemistry (4) Biochemical principles underlying physiological events in animals. Metabolism of carbohydrates, lipids, proteins, and nucleic acids. Role of vitamins and minerals as coenzymes and prosthetic groups. Action of drugs and hormones. (Same as Nutrition 310.)

Contact Hour Distribution: 4 hours and 1 lab.

Credit Restriction(s): Not available for credit if credit has been previously received for Biochemistry and Cellular and Molecular Biology 401 or 410 or 420. Credit may not be applied toward the biochemistry and cellular and molecular biology concentration.

(Re) Prerequisite(s): Biology 140 or Biochemistry and Cellular and Molecular Biology 230.

(De) Prerequisite(s): Chemistry 100 and 110 or Chemistry 120 and 130.

320 Physiology of Reproduction and Lactation (3) (See Animal Science 320.)

321 Introductory Plant Physiology (4) Cell and organismal physiology of plants, metabolic processes, water relations, mineral nutrition, morphogenesis. Effects of age, light, natural rhythms, temperature, and other environmental factors on plant growth.

(Re) Prerequisite(s): Chemistry 120 and Chemistry 130.

(De) Prerequisite(s): Biology 101 and 102 or Biology 130 and 140.
330 Mechanisms of Development (3) A survey course on cellular and molecular basis of embryonic development, differentiation via transcription, RNA processing and translation, sex determination in humans. (RE) Prerequisite(s): Biology 140 and Biology 240.

Comment(s): Intended for biology majors in the biochemistry and cellular and molecular biology concentration, but also open to biology minors in other concentrations.

401 Biochemistry-Molecular Biology I (4) First semester of a two-course sequence providing in-depth coverage of biochemistry and molecular biology. Covers amino acid structure and chemistry, protein structure and chemistry, protein folding, enzyme behavior and function, reaction mechanisms, catalysis and energy transfer, synthetic metabolism including photosynthesis, and protein transport. (RE) Prerequisite(s): Biology 240 and Chemistry 360. (DE) Prerequisite(s): Chemistry 350 and Chemistry 369.

Comment(s): Intended for biology majors in the biochemistry and cellular and molecular biology concentration, but also open to biology majors in other concentrations.

402 Biochemistry-Molecular Biology II (4) Second semester of a two-course sequence providing in-depth coverage of biochemistry and molecular biology. Covers structure of DNA and RNA, experimental methods of analyzing nucleic acids, mechanisms of RNA and protein synthesis, mechanisms of DNA replication, repair and recombination, chromosome structure and function, regulation of gene expression, genome structure and genomics, and mechanisms of biological regulation. (RE) Prerequisite(s): 401.

Comment(s): Intended for biology majors in the biochemistry and cellular and molecular biology concentration, but also open to biology majors in other concentrations.

403 Advanced Genetics Laboratory (3) Experiments illustrating methods in modern genetics, including techniques in classical, cyto-molecular and developmental genetics. Using model organisms, especially Drosophila and mouse. Contact Hour Distribution: Laboratory and lecture. (RE) Prerequisite(s): Biology 240 and Chemistry 360.

404 Plant Molecular Biology (3) Introduction to current research approaches and methodologies in plant developmental biology and molecular genetics. Contact Hour Distribution: Laboratory and lecture. (RE) Prerequisite(s): Biology 240.

409 Perspectives in Biochemistry and Cellular and Molecular Biology (3) Current issues in biochemistry, cell biology and molecular biology. Emphasis on current developments and their applications, societal and economic impacts, and moral and ethical implications. An oral presentation and a referenced library-research essay are required. A capstone course. Writing-emphasis course. (WC) Contact Hour Distribution: 2 hours and 2 labs.

411 Advanced Cellular Biology (3) Cellular structure and function at the molecular and supramolecular levels. Topics include protein structure and function, membrane structure and function, signal transduction and cell regulation, mitosis and the cell cycle, cytoskeleton and cell motility, cell-cell interactions and tissues. (RE) Prerequisite(s): 401.

415 Foundations in Neurobiology (3) Basic nerve cell physiology, nervous system organization, sensory and motor systems, neural basis of behavior, and nervous system development and plasticity. (RE) Prerequisite(s): Biology 140 and Physics 222.

416 Neurobiology Laboratory (2) Experiments designed to illustrate concepts of modern neurobiology using electrophysiological, historical, and behavioral neurobiological techniques. (RE) Prerequisite(s): 415.

419 Cellular and Comparative Biochemistry Laboratory (2) Experiments with enzymes, nucleic acids, and membranes and organelles. Chromatography, kinetics, hybridization, sequencing, and immunochemical methods. (RE) Prerequisite(s): 401.

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, bioinformatics, 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. (RE) Prerequisite(s): 401.

421 Cell and Tissue Structure and Function (4) Study of animal cells and tissues at light and electron microscope levels. Contact Hour Distribution: 2 hours and 2 labs. (RE) Prerequisite(s): Biology 140.

440 General Physiology (3) Principles of cellular and organ-system animal physiology. (RE) Prerequisite(s): Biology 140 and Chemistry 360. Recommended Background: Physics 221 and 222.

452 Independent Research in Biochemistry (1-6) Special experimental problems under direction of a staff member. Repeatability: May be repeated. Maximum 12 hours. (RE) Corequisite(s): 401 and 419.

457 Honors Thesis (1-3) Written preparation and oral presentation of faculty-supervised student research conducted in 452 or equivalent. Repeatability: Not repeatable. May be taken once for 1-3 hours. Credit Restriction(s): Credit may not be applied toward the biochemistry and cellular and molecular biology concentration. (RE) Prerequisite(s): 452.

Registration Restriction(s): Biological sciences majors; honors biochemistry and cellular and molecular biology concentration.

459 Biophysical Crystallography (3) Theories and practices of X-ray diffraction, neutron diffraction and neutron scattering to elucidate the structure of nucleic acids, proteins, nucleosomes, ribosomes and viruses. Application of 3-D structures in designing drugs against AIDS, cancer, cardiac disease and neurodegenerative disorders. Recommended Background: 401, or two 300-level chemistry courses or Physics 240 or consent of instructor.

460 Cancer Biology (3) Fundamental mechanisms of cancer formation and therapy, including cell cycle, cancer epidemiology, cancer pathology, oncogenes, tumor suppressor genes, DNA repair, and metastasis. Recommended Background: Biology 240 or consent of instructor.

465 Human Genetics (3) Genetic and molecular principles and problems of human inheritance. (RE) Prerequisite(s): Biology 240.

471 Biophysical Chemistry (3) Physicochemical principles and problems in biological systems. Thermodynamics, chemical equilibrium, solution chemistry, transport, electrochemistry, kinetics, enzyme catalyzed reactions. (Same as Chemistry 471.) (DE) Prerequisite(s): Chemistry 350 and 360, Biology 130 or 102. Recommended Background: Biology 240 or consent of instructor.

480 Physiology of Exercise (3) (See Exercise Science 480.)

481 Biophysical Chemistry (3) Physicochemical principles and applications to biological systems. Elementary quantum chemistry, interactions of light with biological molecules, optical and magnetic spectroscopy, light scattering, case studies of selected macromolecules. (Same as Chemistry 481.) (DE) Prerequisite(s): Chemistry 350, 360, 369 and Biology 130 or 102. Recommended Background: Calculus.

492 Off-Campus Study (1-6) Grading Restriction: Satisfactory/No Credit grading only. Repeatability: Maximum 12 hours may be applied toward the biochemistry and cellular and molecular biology concentration. Credit Restriction: Maximum 2 hours may be applied toward the biochemistry and cellular and molecular biology concentration. Registration Permission: Consent of instructor.

493 Independent Study (1-3) Independent study under the direction of a faculty member. Repeatability: May be repeated. Maximum 12 hours. Credit Restriction: Maximum 3 hours may be applied toward the biochemistry and cellular and molecular biology concentration. Registration Permission: Consent of instructor.

Biology (190)

100 Human in the Biotic World (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. 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, and evolution, biotechnology and genetic engineering, sex and sexuality, human physiology, cancer, drugs (use and misuse). Laboratories involve a mix of skills-oriented exercises and assignments focused on topics. (NS) Contact Hour Distribution: 3 hours lecture and 1 hour lab. Comment(s): Although not required, it is strongly recommended that 101 and 102 be taken in sequence.
102 Humankind in the Biotic World (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. 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. Laboratories involve a mix of skills-oriented exercises and assignments focused on topics. (NS) Contact Hour Distribution: 3 hours lecture and 1 hour lab. Comment(s): Although not required, it is strongly recommended that 101 and 102 be taken in sequence.

111 General Botany (4) Introduction to the principles of plant biology covering cell biology, respiration, photosynthesis, genetics (including mitosis, meiosis, Mendelian inheritance, recombinant DNA Technology) and classification and diversity of the prokaryotes, fungi, protista, and plant kingdoms. (NS) Contact Hour Distribution: 3 hours lecture and 1 hour lab. Comment(s): Although not required, it is recommended 111-112 be taken in sequence.

112 General Botany (4) Topics include development of the plant body, anatomy, hormonal and environmental growth regulation, plant nutrition, regulation of water and nutrients, origin of life and mechanisms of evolution, speciation, and population genetics, ecology including dynamics of communities and ecosystems, the interaction of plants and people including origin of agriculture, the Green Revolution, and plants as medicines. A survey of current environmental issues related to plant biology and tree identification. (NS) Contact Hour Distribution: 3 hours lecture, 1 hour lab and field trips. Comment(s): Although not required, it is recommended 111-112 be taken in sequence.

130 Biodiversity (4) Unifying concepts and principles of biology, illustrated with diversity of life. Properties of life, molecular basis, origin of life, cells, genetics, introduction to kingdoms, origins of multicellularity, multi-cellular 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. Intended for science majors. (NS) Contact Hour Distribution: 3 hours lecture and 1 hour lab. Credit Restriction: Students receiving credit for both 101 and 102 may not receive credit for 130.

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 electron micrography and centrifugation. (NS) (RE) Prerequisite(s): 130 and Chemistry 120. (RE) Corequisite(s): Chemistry 130.

157 Honors Experimental Biology (4) Integrated lecture/laboratory practice designed as an inquiry-based course with hands-on experimen- tation 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. (NS) (OC) Credit Restriction: Students receiving credit for both 101 and 102 may not receive credit for 157.

202 Inside the Biological Sciences (1) Presentations by faculty and other biology professionals emphasizing applied biological research. Familiarizes students with diverse nature and current applications of biology. Grading Restriction: Satisfactory/No Credit grading only. Repeatability: May be repeated. Maximum 3 hours.

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 sys- tems. Emphasis on development of analytical skills. (RE) Prerequisite(s): 140 or 112. (DE) Prerequisite(s): Chemistry 130.

250 General Ecology (4) Relations between organisms and their envi- ronment, including human environmental problems. Topics include popula-tions, communities, and ecosystems. Contact Hour Distribution: 3 hours lecture and 1 hour discussion, field problems, or computer simulations. (RE) Prerequisite(s): 140 or 112. (DE) Prerequisite(s): Chemistry 130. Comment(s): A working knowledge of college algebra is required.

307 Honors: Colloquy in Biological Research (1) Presentations by professional biologists emphasizing rewards of careers in different areas of biology. Nationally recognized speakers invited each term. Grading Restriction: Satisfactory/No Credit grading only. Repeatability: May be repeated. Maximum 4 hours. Recommended Background: 8 hours of 200-level or above biology courses.

308 Honors: Colloquy in Biological Research (1) Presentations by professional biologists emphasizing rewards of careers in different areas of biology. Nationally recognized speakers invited each term. Grading Restriction: Satisfactory/No Credit grading only. Repeatability: May be repeated. Maximum 4 hours. Recommended Background: 8 hours of 200-level or above biology courses.

397 Honors: Seminar on Research Skills (3) Required of (but not lim- ited to) Threshold Biology Scholars. Technical and cognitive skills neces-sary for participation in biological research. Lecture/presentations and small team demonstrations and discussion. Recommended Background: 8 hours of 200-level or above biology courses. Registration Permission: Consent of instructor.

398 Honors: Practicum in Biological Research (3-5) Required of (but not limited to) Threshold Biology Scholars. Rotation through 3-5 modules of required and elective experience in participating laboratories. Repeatability: Not repeatable for credit. May be taken once for 3-5 hours. Recommended Background: 8 hours of 200-level or above biology courses. Registration Permission: Consent of instructor.

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. Repeatability: May be repeated. Maximum 12 hours.

Biomedical Engineering (192)

271 Biomedical Engineering Principles (1) Application of engineering principles and methods to problem solving in the life sciences and medicine. (RE) Prerequisite(s): Engineering Fundamentals 152.

300 Engineering Physiology (3) Study of human physiology with dis-cussions of selected topics in pathophysiology. Emphasis on topics from a quantitative rather than a descriptive point of view. Discussion of clini-cal correlations of physiological processes. Registration Permission: Consent of instructor.

345 Biomedical Engineering Instrumentation and Measurement (3) Fundamentals of measurement systems. Standards, dynamic characteristics of instruments, and statistical data treatment. Transducers, signal conditioning, strain, pressure, and temperature and flow measurements. (RE) Prerequisite(s): Aerospace Engineering 341 and Electrical and Computer Engineering 300. (RE) Corequisite(s): 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. (RE) Prerequisite(s): Mechanical Engineering 231 and Mathematics 231.

409 Cell and Tissue Engineering (3) Mammalian cell culture. Effects of mechanical forces on cells. Tissue engineering of cardiovascular and orthopedic devices. (RE) Prerequisite(s): Biochemistry and Cellular and Molecular Biology 230 or Biology 140.

410 Professional Topics (2) Topics relating to professional responsibili- ties, communications, and organization. Requires a formal oral presenta-tion by each student on an engineering topic chosen by the student and approved by the instructor. (OC) (RE) Prerequisite(s): 455. Registration Restriction: Minimum student level – senior.

430 Biomedical Engineering Laboratory (3) Experience with the unique problems associated with making measurements and interpreting data in living systems. Experiments may include mechanical testing of biological mate-rials, imaging, and physiological measurements (EKG, EMG, ECO, etc.). (RE) Prerequisite(s): 345 and Electrical and Computer Engineering 300.

455 Biomedical Engineering Design I (2) Design of biomedical systems. Economics, optimization, reliability, patents and product liability. Participation in team design efforts. Requires oral and written design reports. (RE) Corequisite(s): 430.
469 Biomedical Engineering Design II (3) Design of complete biomedical device. Documentation includes complete specification, design calculations, preparation of working drawings, and cost analysis. Requires written and oral reports.
(RE) Prerequisite(s): 455.

473 Applied Biomechanics (3) Applications of biomechanics to the industrial and orthopedic area. Design of orthopedic implant devices; biomechanics of injury and area protection.
(RE) Prerequisite(s): Mechanical Engineering 321.

474 Biomaterials (3) (See Materials Science and Engineering 474.)

475 Design of Artificial Internal Organs (3) Design, development, and evaluation of artificial internal organs; analysis of transport processes in therapeutic devices for design optimization; current research and development needs. Ethical considerations.
(RE) Prerequisite(s): Aerospace Engineering 341 and Mathematics 231.

485 Advanced Biomedical: Biological Application of Nanomaterials (3) (See Materials Science and Engineering 485.)

486 Cell and Tissue-Biomaterials Interaction (3) (See Materials Science and Engineering 486.)

494 Special Project in Biomedical Engineering (1-3) Problems related to recent developments and practice. Repeatability: May be repeated once. Registration Permission: Consent of instructor.

495 Special Project in Biomedical Engineering (1-3) Problems related to recent developments and practice. Repeatability: May be repeated once. Registration Permission: 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.
Contact Hour Distribution: 2-hour lab.
(RE) Prerequisite(s): 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).
Contact Hour Distribution: 2 hours and 1 lab.
(RE) Prerequisite(s): Chemistry 120 and 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.
(RE) Prerequisite(s): Chemistry 120 and 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.
Contact Hour Distribution: 2 hours and 1 lab.
(RE) Prerequisite(s): 221.

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. (OC)
(RE) Prerequisite(s): 431 and 451.
(RE) Corequisite(s): 404.

402 Biosystems Engineering Design II (6) Culmination of capstone design sequence. Intensive design experience on project chosen and approved in 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 and submission of design to external engineering design competition or display required.
Contact Hour Distribution: 2-hour lecture, 2-hour recitation, 4-hour lab.
(RE) Prerequisite(s): 401 and 444.

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.
(RE) Corequisite(s): 401.

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.
Contact Hour Distribution: 2 hours and 1 lab.
(RE) Prerequisite(s): Mechanical Engineering 231 and Mechanical Engineering 321.

416 Hydrology (3) An introduction to hydrology including hydriclogic variation, infiltration, runoff, evapotranspiration, and river flow. Analysis of water quality and non-point pollution, energy dissipation, streamflow measurement, hydrographs, routing, open channel flow, and urban hydrology.
(Same as Civil Engineering 416.)
(DE) Prerequisite(s): Statistics 251.

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 and systems; introduction to bioseparations; practical aspects of bioprocess engineers and process development.
Contact Hour Distribution: 2 hours and 1 lab.
(RE) Prerequisite(s): 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.
Contact Hour Distribution: 1 hour and 2 labs.
(RE) Corequisite(s): 401.

451 Electronic Systems (4) Basic electronics with biological applications. Analog and digital electronics; sensing and controlling physical and environmental parameters; sensor selection and interfacing; signal conditioning; process control. Includes laboratory experiments and design projects.
Contact Hour Distribution: 3 hours and 1 lab. Design content – 1 hour.
(RE) Prerequisite(s): Electrical and Computer Engineering 301.

470 Special Problems in Biosystems Engineering (1-3) Selection, analysis solution, and report of problem. Repeatability: May be repeated. Maximum 6 hours.
Registration Permission: Consent of instructor.

480 Selected Topics in Biosystems Engineering (1-3) Current trends and problems in biosystems engineering. Repeatability: May be repeated. Maximum 6 hours.

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.
Contact Hour Distribution: 1 hour and 2 labs.

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.
(RE) Prerequisite(s): Agriculture and Natural Resources 290.

412 Surveying (3) Measurement of landforms using radar, remote imagery, satellite real-time kinematics, and laser-based surveying instruments. Survey methods and mapping using GIS. Precision landform measurement of distances, angles, and areas; differential and profile leveling; topographic surveying and mapping; area computation.
Contact Hour Distribution: 1 hour and one 3-hour lab.
Recommended Background: College mathematics and computer literacy.

414 CAD Applications to Biosystems Engineering Technology (3) Computer Aided Drafting (CAD) applications in agriculture and environmental science. Essentials of CAD software to create drawings of components, flow charts, and process diagrams. Applications in mechanical structural, and biosystems. 2-D applications with limited exposure to 3-D applications. Computer intensive course. Hands-on experience. Credit Restriction: Students cannot receive credit for both 414 and 514.
Contact Hour Distribution: Two 2-hour labs.
Recommended Background: Computer proficiency.
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, plowing and small grain harvesting, and cotton harvesting. Crop drying processes, off-road machinery safety considerations, and operator ergonomics.

Contact Hour Distribution: 2 hours and 1 lab.
(RE) Prerequisite(s): Mathematics 123 or 151.

434 Production Monitoring and Automation (3) Precision technologies for monitoring and control of agricultural systems. Applications include remote 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.

Contact Hour Distribution: 2 hours and 1 lab.
(RE) Corequisite(s): 326.

442 Agricultural Waste Management and Pollution Control (3) Waste renovation fundamentals; characteristics of animal manure, techniques for collecting, transporting, storing, and utilizing livestock waste.

Contact Hour Distribution: 2 hours and 1 lab.
(RE) Prerequisite(s): Mathematics 123 or Mathematics 125.

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.

Contact Hour Distribution: 2 hours and 1 lab.
(RE) Prerequisite(s): Mathematics 113 or 123.

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.

Contact Hour Distribution: 2 hours and 1 lab.
(RE) Prerequisite(s): Mathematics 123 or 151.

474 Environmental Instrumentation and Monitoring (3) Equipment and techniques commonly used to measure all aspects of hydrologic cycle – precipitation, runoff, streamflow, and subsurface water movement. Sampling of all flows for contaminants. Design of monitoring systems. Analysis of data.

Contact Hour Distribution: 2 hours and 1 lab.
Credit Restriction: Students cannot receive credit for both 474 and 574.
(RE) Prerequisite(s): Environmental and Soil Sciences 324.

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.

Grading Restriction: Satisfactory/No Credit grading only.
Credit Restriction: Students may not receive credit for both Business Administration 100 and First Year Studies 101.

201 Business Functions (4) Understanding how business works through application and integration of fundamental business functions. Includes aspects of marketing, finance, logistics, operations, organizational behavior, and information management.

(RE) Prerequisite(s): Accounting 200 and Economics 201.
(RE) Corequisite(s): Statistics 201 or Statistics 207.

207 Honors: Business Functions (4) Understanding how business works through application and integration of fundamental business functions. Includes aspects of marketing, finance, logistics, operations, organizational behavior, and information management.

(RE) Prerequisite(s): Accounting 207 and Economics 207.
(RE) Corequisite(s): Statistics 207.
Comment(s): Admission to the College of Business Administration’s Global Leadership Scholars Program is required.

217 Leadership Seminar: Approaches (1) Introduction to approaches and frameworks of leadership within the business context.

Grading Restriction: Satisfactory/No Credit grading only.
Comment(s): Admission to the College of Business Administration’s Global Leadership Scholars Program is required.

217 Leadership Seminar: Thesis Preparation (2) Approaches to contemporary business research design: literature review, research methodologies, measurement, data analysis, and interpretation.

(RE) Prerequisite(s): 217.
Comment(s): Admission to the College of Business Administration’s Global Leadership Scholars Program is required.

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, and using the placement office.

Grading Restriction: Satisfactory/No Credit grading only.

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.

(RE) Prerequisite(s): 201.
(RE) Corequisite(s): 332.
Registration Restriction(s): Majors in the College of Business Administration.

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.

(RE) Prerequisite(s): 201.
(RE) Corequisite(s): 331.
Registration Restriction(s): Majors in the College of Business Administration.

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 the value chain. Specific techniques for designing process design, such as pull replenishment, cellular layout, standard work, and mixed model sequencing.

(RE) Prerequisite(s): 201.
(RE) Corequisite(s): 342.
Registration Restriction(s): Majors in the College of Business Administration.

342 CBM II: Information Management (2) Emphasis on the concepts, structure, 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.

(RE) Prerequisite(s): 201.
(RE) Corequisite(s): 341.
Registration Restriction(s): Majors in the College of Business Administration.

353 CBM III: Integrated Process Management (3) Behavioral processes in organizations with an emphasis on team dynamics and decision making within the contextual framework of integrated business process management.

(RE) Prerequisite(s): 331 and 341.
(RE) Corequisite(s): 361 and Finance 301.
Registration Restriction(s): Majors in the College of Business Administration.

357 Honors: CBM III: Integrated Process Management (3) Behavioral processes in organizations with an emphasis on team dynamics and decision making within the contextual framework of integrated business process management.

(RE) Prerequisite(s): 331 and 341.
(RE) Corequisite(s): 361 and Finance 307.
Comment(s): Admission to the College of Business Administration’s Global Leadership Scholars Program is required.

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.

(RE) Prerequisite(s): 201.
Registration Restriction(s): Majors in the College of Business Administration.

400 Special Topics (1-9) Topics of current interest in international business. Topics announced prior to offering.
Repeatability: May be repeated if topic is different. Maximum 9 hours.
(RE) Prerequisite(s): 361.

401 Peer Mentor Techniques (1) Training of upper-class 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, and mentoring and advising skills.

Registration Restriction(s): Majors in the College of Business Administration.
Registration Permission: Consent of Instructor.

402 Peer Mentor Practicum (1) Peer mentoring of first year students.
Grading Restriction: Satisfactory/No Credit grading only.
Repeatability: May be repeated. Maximum 3 hours.
(RE) Prerequisite(s): 401.
Registration Restriction: Majors in the College of Business Administration.
Registration Permission: Consent of instructor.
410 Leadership Perspectives (3) A holistic approach to the development of personal and professional leadership skills. Topics include: organizational culture within differing institutional frameworks, models of leadership, individual motivation, mentorship, effective and artful communication, opportunity identification.

Registration Restriction(s): Minimum student level – junior.

417 Leadership Seminar: Applications (2) Approaches to leading and leadership development through interaction with current industry leaders from multiple business and community environments.

(REG) Prerequisite(s): 317.
Comment(s): Admission to the College of Business Administration’s Global Leadership Scholars Program is required.

427 Leadership Seminar: Capstone (2) Application of leadership concepts and methodologies in business and community environments.

(REG) Prerequisite(s): 417.
Comment(s): Admission to the College of Business Administration’s Global Leadership Scholars Program is required.

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.

Recommended Background: Business Administration 332 and Finance 301.
Registration Restriction(s): Majors in the College of Business Administration; minimum student level – senior.
Registration Permission: Consent of instructor.

491 Foreign Study (1-15)

Repeatability: May be repeated. Maximum 15 hours.
Registration Restriction(s): Majors in the College of Business Administration.
Registration Permission: Consent of instructor.

492 Off-Campus Study (1-15)

Grading Restriction: Satisfactory/No Credit grading only.
Repeatability: May be repeated. Maximum 15 hours.
Registration Restriction(s): Majors in the College of Business Administration.
Registration Permission: Consent of instructor.

493 Independent Study (1-15)

Repeatability: May be repeated. Maximum 15 hours.
Registration Restriction(s): Majors in the College of Business Administration.
Registration Permission: Consent of instructor.

497 Honors Thesis (3) Supervised thesis research.

(REG) Prerequisite(s): 317.
Comment(s): Admission to the College of Business Administration’s Global Leadership Scholars Program is required.

Business Law (216)

301 Legal Environment of Business (3) Survey of legal and ethical topics affecting business. Coverage includes legal and business ethics; dispute resolution mechanisms; and substantive and procedural law of regulation, torts, contracts, property, intellectual property, business associations, and employer/employee relations.

Registration Restriction(s): Minimum student level – junior.

Chemical Engineering (226)

201 Material and Energy Balances (4) Steady-state and transient material and energy balances in chemical and biomolecular systems. Introduction to flowsheet software.

(REG) Prerequisite(s): Engineering Fundamentals 152 and Chemistry 130.
(REG) Corequisite(s): 290 and Engineering Fundamentals 230.

235 Fundamentals of Molecular Bioengineering (3) Summary of principles of biomolecular, molecular biology, genetics and molecular biophysics; emphasis on applied science perspective. Examples of biologically-based molecular technologies and analysis and manipulation of living systems for technological applications.

(REG) Prerequisite(s): Biology 140.

240 Fluid Flow and Heat Transfer (4) Force, energy and mechanical energy balances; flow in tubes, piping systems, packed and fluidized beds; pumping and metering; steady and unsteady state heat conductivity; heat transfer in tubes and heat exchangers; radiation.

(REG) Prerequisite(s): 201.
(REG) Corequisite(s): Mathematics 231.

250 Application of Chemical and Biomolecular Engineering Thermodynamics (4) Basic concepts related to engineering applications of thermodynamics to the chemical and biomolecular industries; emphasis on flow processes, real gases and liquids, protein synthesis and hydration, estimation of physical properties, phase equilibria of industrial chemical and pharmaceutical processes, and chemical reaction equilibria including biomolecular applications.

(REG) Prerequisite(s): 201.


(REG) Prerequisite(s): Engineering Fundamentals 230.
(REG) Corequisite(s): Mathematics 231.

310 Chemical and Biomolecular Engineering Laboratory (3) Thermodynamics, fluid flow, and heat transfer experiments in chemical and biomolecular engineering. (WC)

(REG) Prerequisite(s): Engineering Fundamentals 230 and Mathematics 142.
Registration Restriction(s): Chemical engineering major; 2.30 GPA.

340 Mass Transfer and Separation Processes (3) Stage-wise operation. Application of analytical, graphical, and computer methods to design of stage-wise 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.

(REG) Prerequisite(s): 201 and 250.
Registration Restriction(s): 2.30 GPA.

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.

(REG) Prerequisite(s): 201 and 240.
(REG) Corequisite(s): Mathematics 231.
Registration Restriction(s): 2.30 GPA.

380 Seminar (1) Presentation and discussion of topics in the practice of chemical and biomolecular engineering.

Grading Restriction: Satisfactory/No Credit Grading only.

394 Chemical and Biomolecular Engineering Co-op (1) Co-op experiences in chemical and biomolecular engineering. Technical report writing and presentations.

Repeatability: May be repeated. Maximum 3 hours.
Registration Permission: Consent of instructor.


Grading Restriction: Letter grade only.
(REG) Prerequisite(s): 450.

407 Honors Seminar (1) Presentations and discussions on topics of importance to chemical and biomolecular engineers.

Grading Restriction: Satisfactory/No Credit grading only.
Repeatability: May be repeated. Maximum 3 hours.
Registration Permission: Consent of instructor.


445 Separation Process Technology for the Pharmaceutical and Chemical Process Industries (3) Multicomponent distillation, theory and computer simulations; specialized technologies, including membrane separation, crystallization, adsorption, and chromatography.

(REG) Prerequisite(s): 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.

(REG) Prerequisite(s): 201 and 301.
(ED) Prerequisite(s): 240.

455 Chemical and Bioengineering 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.

(REG) Prerequisite(s): 240 and 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.

(REG) Prerequisite(s): 360.
Registration Permission: Consent of instructor.

475 Applied Microbiology and Bioengineering (3) Cross-disciplinary course combining basic concepts in microbiology, biochemistry, reaction kinetics, and biochemical and environmental engineering. Commercial processes, biodegradation/wastewater treatment, analysis of basic bioreactor systems, biosensors, and immobilization methods.
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. Recommended Background: 360. Registration Permission: 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.
Registration Permission: Consent of instructor.

480 Equipment Design and Economic Methods (3) Design, optimization, and costing of chemical and biochemical plant equipment. Introduction to economic evaluation methods, capital investment, discounted cash flows, and net present value.
(Re) Prerequisite(s): 360 and Chemistry 350. (Re) Corequisite(s): 445 and 450.

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.
Registration Permission: 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 and Biological Process Safety (3) Introduction to chemical process safety augmented with case studies. Topics include safety strategies and accident prevention; toxic substances in the workplace and industrial hygiene; accidental release of hazardous materials and dispersion modeling; fires and explosions – design for prevention; design of emergency pressure relief systems; and identifying potential hazards.
(Re) Prerequisite(s): 201 and 240.

488 Honors: Design Internship in Green Engineering (3) Selected students work in small groups to address the prevention of industrial pollution through improved design of chemical and biochemical processes. Directed by faculty and engineers from a host company.
(Re) Prerequisite(s): 490.
Comment(s): May be substituted for 490 with departmental approval.
Registration Permission: Consent of instructor.

(Re) Prerequisite(s): 490.

494 Special Problems in Chemical and Biomolecular Engineering (1–3) Chemical and biomolecular engineering problems related to recent developments in industrial practice or engineering research.
Repeatability: May be repeated. Maximum 6 hours.
Registration Permission: Consent of instructor.

498 Honors Thesis (3) Research on problems related to recent developments in chemical and biomolecular engineering.
Registration Permission: 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. (NS)
Contact Hour Distribution: 3 hours and 1 lab.
Credit Restriction: Credit may be received for only one of the following courses – 100, 120, or 128.

Contact Hour Distribution: 3 hours and 1 lab.
(De) Prerequisite(s): 100 or 130 or 138 or consent of department head.

120 General Chemistry I (4) A general course in theoretical and descriptive chemistry. Modern atomic theory, chemical bonding, stoichiometric quantitative treatment of gas laws, quantitative aspects of solution chemistry, kinetics. (NS)
Contact Hour Distribution: 3 hours and 1 lab.
Credit Restriction: Credit may be received for only one of the following courses – 100, 120, or 128.

128 Honors: General Chemistry I (4) (NS)
Contact Hour Distribution: 3 hours and 1 lab.
Credit Restriction: Credit may be received for only one of the following courses – 100, 120, or 128.

130 General Chemistry II (4) A general course in theoretical and descriptive chemistry. Chemical equilibria, thermochemistry, descriptive chemistry of non-metallic and metallic elements, electrochemistry, introduction to organic and biochemistry. (NS)
Contact Hour Distribution: 3 hours and 1 lab.
(Re) Prerequisite(s): 120 or 128.

138 Honors: General Chemistry II (4) (NS)
Contact Hour Distribution: 3 hours and 1 lab.
(Re) Prerequisite(s): 128.

150 Chemistry and Society (3) Food and agricultural chemistry, chemistry of life, chemistry in medicine, air and water pollution, energy and fuels.
Contact Hour Distribution: 3 hours lecture.
Credit Restriction: May not be used toward a major or minor in chemistry.

160 Chemistry and the Home (3) Chemistry and the consumer, household products, chemistry in the kitchen and around the home.
Contact Hour Distribution: 3 hours lecture.
Credit Restriction: May not be used toward a major or minor in chemistry.

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.
Repeatability: May be repeated. Maximum 4 hours.
Credit Restriction: May not be used toward a major or minor in chemistry.
Comment(s): Chemistry course numbered 230 or higher is a corequisite.
Registration Permission: Consent of department head.

230 Inorganic Chemistry (3) Periodicity, valence, bonding, and the descriptive chemistry of the elements. Coordination compounds, nuclear chemistry, transition elements, and inner-transition elements.
Contact Hour Distribution: 2 hours and 1 lab.
(Re) Prerequisite(s): 130 or 138.

240 Chemical Programming (2) Use of the computer in solving problems encountered in chemistry.
Contact Hour Distribution: 1 hour and 1 lab.
(Re) Prerequisite(s): 130 or 138.

310 Analytical Chemistry (3) Principles and practices of quantitative measurements in chemical systems. Acid-base, complexometric, and redox equilibria. Applications of titrimetric analysis; polarimetry; elementary spectrophotometry; chemical separations, including chromatography, ion exchanger, and solvent extraction.
(Re) Prerequisite(s): 130 or 138.

319 Analytical Chemistry Laboratory (1) Experiments on topics covered in 310.
(Re) Corequisite(s): 310.

320 Advanced Analytical Chemistry (3) Modern electroanalytical methods, mass spectrometry, optical spectroscopic techniques, magnetic resonance methods, and advanced chromatographic theory.
(Re) Prerequisite(s): 310.

329 Advanced Analytical Chemistry Laboratory (2) Experiments on topics covered in 320.
(Re) Corequisite(s): 310.

350 Organic Chemistry I (3) Compounds of carbon and their reactions. Reaction mechanisms, synthesis, spectroscopic, and other physical properties.
Credit Restriction: Students may not receive credit for both 350 and 358.
(Re) Prerequisite(s): 130 or 138.

358 Honors: Organic Chemistry I (3) Enhanced version of Chemistry 350 with added emphasis on reactive species, important structural variations, synthesis, and biological implications.
Credit Restriction: Students may not receive credit for both 358 and 358.
(De) Prerequisite(s): 130 or 138.
Comment(s): Students using 130 as a prerequisite must have a grade of B or better and permission of instructor. Intended and recommended for chemistry, biochemistry, and other physical science majors preparing for careers in science or health-related fields.

360 Organic Chemistry II (3) Compounds of carbon and their reactions. Reaction mechanisms, synthesis, spectroscopic, and other physical properties.
Credit Restriction: Students may not receive credit for both 360 and 368.
(Re) Prerequisite(s): 350 or 358.
(Re) Corequisite(s): 369.
368 Honors: Organic Chemistry II (3) Enhanced version of Chemistry 360 with added emphasis on reactive species, important structural variations, synthesis, and biological implications.
Credit Restriction: Students may not receive credit for both 368 and 360.
(DE) Prerequisite(s): 358 or 350.
(OC) Corequisite(s): 369.
Comment(s): Students using 350 as a prerequisite must have a grade of B+ or better and permission of instructor. Intended and recommended for chemistry, biochemistry, and other physical science majors preparing for careers in science or health-related fields.
369 Organic Chemistry Laboratory (2) Experiments on topics discussed in 350-360 and 358-368.
Contact Hour Distribution: 1-hour lecture and 4-hour lab.
(OC) Corequisite(s): 360 or 368.
400 Research in Chemistry (3) Advanced students work with faculty on projects requiring knowledge and skills acquired in chemistry curriculum. Written reports are required. May be followed by either 400 or 408 (but not both).
Repeatability: May be repeated. Maximum 6 hours.
Registration Restriction(s): Chemistry major; minimum student level – senior.
Registration Permission: 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 are required. Writing-emphasis course.
406 Senior Seminar (1) Discussions by faculty and students of current research and topics from recent literature. Oral and written reports are required. All chemistry majors are encouraged to enroll. (OC)
Repeatability: May be repeated. Maximum 2 hours.
Registration Restriction(s): Chemistry major; minimum student level – senior.
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.
(OC) Prerequisite(s): 400.
Registration Permission: Consent of department head.
420 Selected Topics in Chemistry (1-3) Topics of current significance in chemistry.
Repeatability: May be repeated. Maximum 6 hours.
Credit Restriction: Only 3 credits may be applied to a major or minor in chemistry.
Registration Permission: Consent of instructor.
430 Advanced Inorganic Chemistry (3) Atomic and molecular structure, bonding theories, descriptive chemistry of the elements; kinetics and mechanism of inorganic reactions; applications of modern techniques for characterization, coordination, and organometallic chemistry.
(OC) Prerequisite(s): 210.
439 Advanced Inorganic Chemistry Laboratory (1) Modern experimental techniques in inorganic chemistry, including synthesis, analysis, and handling of air-sensitive materials.
(OC) Corequisite(s): 430.
Comment(s): Open only to chemistry majors (Bachelor of Science in Chemistry) or with consent of instructor.
450 Advanced Organic Chemistry (3) Modern organic reactions of mechanistic, synthetic, and theoretical interest. Content reflects current trends in the area.
(OC) Prerequisite(s): 360.
471 Biophysical Chemistry (3) (See Biochemistry and Cellular and Molecular Biology 471.)
473 Physical Chemistry I (3) Properties of gases; first, second and third laws of thermodynamics; chemical equilibria; simple phase equilibria; properties of solutions.
Credit Restriction: Students may not receive credit for both 471 and 473.
(OC) Prerequisite(s): 130 or 138.
(DE) Prerequisite(s): Mathematics 241 or 247; Physics 136 or 138 or 222 or 231.
479 Physical Chemistry Laboratory I (2) Experiments on topics discussed in 471 or 473.
Contact Hour Distribution: 1 lab.
(OC) Corequisite(s): Biochemistry and Cellular and Molecular Biology 471 or Chemistry 473.
481 Biophysical Chemistry (3) (See Biochemistry and Cellular and Molecular Biology 481.)
483 Physical Chemistry II (3) Introduction to statistical thermodynamics; kinetics of chemical reactions; introduction to quantum mechanics and applications to electronic structure of atoms and molecules; molecular spectroscopy.
Credit Restriction: Students may not receive credit for both 481 and 483.
(OC) Prerequisite(s): 130 or 138.
(DE) Prerequisite(s): Mathematics 241 or 247 and Physics 136 or 138 or 222 or 231.
489 Physical Chemistry Laboratory II (2) Experiments on topics discussed in 481 or 483.
Contact Hour Distribution: 1 lab.
(OC) Corequisite(s): Biochemistry and Cellular and Molecular Biology 481 or Chemistry 483.
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.
(OC) Prerequisite(s): 360.
(OC) Corequisite(s): Biochemistry and Cellular and Molecular Biology 471 or Chemistry 473.

Child and Family Studies (245)

101 Introduction to Child and Family Studies (2) Orientation to the Department of Child and Family Studies, including requirements for the major, introduction to the faculty and their work, exposure to professional organizations, and learning about potential career possibilities. Includes observations.
Registration Restriction(s): Freshmen and sophomores only.
210 Human Development (3) Conception through adulthood in various social/ecological contexts. Interrelationships among various aspects of development – physical, cognitive, emotional, social. Normative and non-normative development. (SS)
211 Development in Infancy and Childhood (3) Development from conception through middle childhood in various ecological contexts. Interrelationships among cognitive, emotional, social, and biological aspects of ontogeny. Normative and non-normative development. Includes observation.
(OC) Prerequisite(s): 211.
220 Marriage and Family: Roles and Relationships (3) Emerging and declining roles. Changing relationships among family members across the life cycle from various theoretical approaches. Impact of gender roles on marital relationships. Marital quality, power, decision-making, communications, conflict management, and 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 the elderly. Adjustment to internal and environmental changes through adulthood. Interrelationships among various aspects of development – physical, cognitive, emotional, and social. Includes observation.
(OC) Prerequisite(s): 210.
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.
Registration Restriction(s): Minimum student level – junior.
345 Family Resource Management (3) Theory and application of managerial functioning in family settings. Analysis of goals, resource use, information systems, and constraints within families. Observation and analysis of diverse family practices.
Registration Restriction(s): Minimum student level – junior.
350 Early Childhood Education I: Environments for Children (4)
Classroom management, behavior guidance, organization of day care
environments, communication, interpersonal skills, interaction with chil-
dren, child stress reduction, and management in classroom.
Contact Hour Distribution: Includes laboratory participation.
(Re) Prerequisite(s): 106 and 211.

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, and physical knowledge. Planning, implementing, and evaluating curriculum activities.
Contact Hour Distribution: Includes laboratory participation.
(Re) Prerequisite(s): 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.
(Re) Prerequisite(s): 350.

360 Family Stress (3)
Family’s response to stressful circumstances. Skills for intervention into family systems. Violence, abuse, divorce, illness, and death.
Registration Restriction(s): Minimum student level – junior.

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.
Registration Restriction(s): Minimum student level – junior.

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, and data analysis. Quantitative and qualitative methods; natural and contrived settings; and principles for understanding research that impact children and families.
(Re) Prerequisite(s): 210 and 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. (OC) (WC)
(Re) Prerequisite(s): 210 and 220.

422 Early Childhood Teaching Methods (6)
Fundamentals of teaching language arts, math, science, and social studies through a holistic, integrative approach to early childhood education. Focus on grades K-3. Includes field experience.
(Re) Prerequisite(s): 351 and 470.
Registration Restriction(s): Qualification – admission to teacher education.

423 PreK-K Teaching Methods (6)
The knowledge, skills, and dispositions needed to become an inquiry-based, reflective practitioner who is a teacher of young children (birth through five years of age), in pre-kindergarten and kindergarten classrooms. Involves lecture and field placement components.
(Re) Prerequisite(s): 350.
Registration Restriction(s): Qualification – admission to teacher education.

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.
(Re) Prerequisite(s): 320.
Registration Restriction(s): Child and family studies major.

460 Directed Study in Child and Family Studies (1-3)
Individual learning experience arranged for students under supervision of faculty.
Repeatability: May be repeated if topic is different. Maximum 6 hours.
Recommended Background: 9 hours in child and family studies.
Registration Permission: Consent of instructor.

470 Practicum: Pre-K Teaching (6-12)
Responsibility for planning and guiding groups of infants, toddlers, or preschoolers under supervision of a classroom teacher and coordinator. Includes weekly seminar.
Grading Restriction: Satisfactory/No Credit grading only. Repeatability: Not repeatable for credit. May be taken once for 6-12 hours.
(Re) Prerequisite(s): 351 and 405.

471 Practicum: Child Development (3-12)
Supervised experiences working with children and families in early childhood settings.
Grading Restriction: Satisfactory/No Credit grading only. Repeatability: May be repeated. Maximum 12 hours.
(Re) Prerequisite(s): 405.

472 Practicum: Student Teaching PreK-K (12)
Field placement in PreK-K classroom settings with responsibility for curriculum planning and the supervision, assessment, and teaching of young children. Includes weekly seminar. This course is only for students in the PreK-K Teacher Licensure program and is designed to meet PreK-K licensure requirements.
Grading Restriction: Satisfactory/No Credit grading only.
(Re) Prerequisite(s): 405 and 423.
Comment(s): Fall placements are based on public school calendars and the beginning date will vary. Spring placements begin on the first day of registration. All placements end on the last day of the final examination period. Placements follow the school calendar, not the UT calendar and they do not include UT fall or spring breaks.

480 Practicum: Community Placement (9-12)
Supervised experiences with an area agency serving the needs of children and families.
Grading Restriction: Satisfactory/No Credit grading only. Repeatability: Not repeatable for credit. May be taken once for 9-12 hours.
Comment(s): Summer practicum placement begins the Monday after spring commencement and concludes the last day of the summer session.
Registration Restriction(s): Minimum student level – senior.

481 Research in Child and Family Studies (3-6)
Supervised research experiences.
Repeatability: May be repeated. Maximum 6 hours.
(Re) Prerequisite(s): 395.

485 Special Topics in Child and Family Studies (1-9)
Personal or professional interest in human development or family studies.
Repeatability: May be repeated. Maximum 9 hours.
Recommended Background: 9 hours in child and family studies.
Registration Restriction(s): Minimum student level – junior.
Registration Permission: Consent of instructor.

490 Practicum: Research (3-12)
A 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.
Grading Restriction: Satisfactory/No Credit grading only. Repeatability: May be repeated. Maximum 12 hours.
(Re) Prerequisite(s): 395 and 405.

497 Honors: Child and Family Studies (3-6)
Issues or topics affecting children and/or families. Designed to meet particular interests of the student.
Repeatability: May be repeated. Maximum 6 hours.
Recommended Background: 15 hours in child and family studies.
Registration Restriction(s): Minimum student level – junior.
Registration Permission: Consent of instructor.

Chinese (249)

131 Elementary Chinese I (5) (See Asian Languages 131.)
132 Elementary Chinese II (5) (See Asian Languages 132.)
231 Intermediate Chinese I (5) (See Asian Languages 231.) (CC)
232 Intermediate Chinese II (5) (See Asian Languages 232.) (CC)
311 Chinese Literature in English Translation (3) (See Asian Languages 311.)
312 Chinese Literature in English Translation (3) (See Asian Languages 312.)
331 Advanced Chinese I (4) (See Asian Languages 331.)
332 Advanced Chinese II (4) (See Asian Languages 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 Political Science 312.)
315 Asian Film (3) (See Asian Languages 315.)
323 German Film (3) (See German 323.)
325 Russian Film (3) (See Russian 325.)
326 Brazilian Cinema (3) (See Portuguese 326.)
334 Film and American Culture (3) (See English 334.)
365 Writing the Screenplay (3) (See English 365.)
400 Special Topics (3)
   Repeatability: May be repeated. Maximum 6 hours.
420 French Cinema (3) (See French 420.)
422 Topics in Italian Cinema (3) (See Italian 422.)
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.)
482 Special Topics in Global Cinema (3) (See Modern Foreign Languages and Literatures 482.)
489 Special Topics in Film (3) (See English 489.)
491 Foreign Study (1-15)
   Repeatability: May be repeated. Maximum 15 hours.
492 Off-Campus Study (1-15)
   Repeatability: May be repeated. Maximum 15 hours.
493 Independent Study (1-15)
   Repeatability: May be repeated. Maximum 15 hours.

Civil Engineering (254)
205 Professional Development I (2) Introduction to civil engineering specialties, history, and achievements. Professional responsibility, communication, and organizations. (OC) (WC)
   (RE) Prerequisite(s): Engineering Fundamentals 151 or 157.
   Registration Restriction(s): Minimum student level – sophomore.
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.
   Contact Hour Distribution: 3 hours and 1 lab.
   Registration Restriction(s): Minimum student level – sophomore.
261 Structural Analysis I (3) Reactions, shear and moment diagrams, forces in trusses, uniaxial stress and strain, area moments of inertia, and torsion.
   (RE) Prerequisite(s): Engineering Fundamentals 202.
305 Professional Development II (1) Legal and ethical responsibilities, continuous improvement, career planning, and leadership.
   (RE) Prerequisite(s): 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, through the department, through the college, or through other approved groups. May include participation in the annual ASCE Regional Student Chapter Conference.
   Repeatability: May be repeated. Maximum 6 hours.
   Credit Restriction: May not be used as credit toward graduation.
   Registration Restriction(s): Majors in the College of Engineering; minimum student level – sophomore.
   Contact Hour Distribution: 2 lectures and 1 lab.
   (RE) Prerequisite(s): 205 and 261.
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.
   Contact Hour Distribution: 3 hours and 1 lab.
   (RE) Prerequisite(s): 205 and 261.
   (RE) Corequisite(s): 361.
223 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 is on material remains and anthropological theory used to recreate the cultures of the Minoans, Mycenaeans, Dark Age Greeks, and Etruscans. 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 I (3) Grammar review and readings. (CC)
(PE) Prerequisite(s): 112 or 150 or placement exam.

252 Intermediate Latin II (3) Selected readings. (CC)
(PE) Prerequisite(s): 251.

253 Greek and Roman Literature in English Translation (3) Major literature of ancient Greece from Homer to Tacitus. Writing-emphasis course. (AH)

(RE) Prerequisite(s): 122.

264 Intermediate Greek: Epic Poetry (3) Content varies. (CC)
(RE) Prerequisite(s): 261.

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.

301 History of Early Greece (3) Greek history from the earliest human occupation of Greece to the Greek recovery after the Persian Wars, with an emphasis on the 8th-6th centuries BCE. Readings and discussion to include Bronze Age Greece and Crete; economy and society in the early Iron Age; the emergence and evolution of the Greek city-state; social tensions and the development of classical democracy; ideologies of militarism, empire, and civil strife; ancient and modern historiographies of Early Greece. Writing-emphasis course. (Same as History 301.)

302 History of Classical Greece (3) Greek history from the Persian Wars to Alexander the Great, with an emphasis on the 5th-4th centuries BCE. Readings and discussion to include economy and society in Classical Athens and Sparta; the Peloponnesian War; Socrates, the sophists and intellectual responses to democracy and empire; crises of the Greek city-states; Philip II, Alexander the Great and the rise of Macedon; and ancient and modern historiographies of Classical Greece. Writing-emphasis course. (Same as History 302.)

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.)

306 History of Hellenistic Greece (3) Greek history from Alexander the Great to the battle of Actium, with an emphasis on the 3rd-1st centuries BCE. Readings and discussion to include Alexander the Great and the expansion of the Greek world; monarchy, ruler-cult and the Greek city-state; economy and society in the Ptolemaic, Seleucid and Antigonid kingdoms; the arrival of Rome in the eastern Mediterranean; ancient and modern historiographies of Hellenistic Greece. Writing-emphasis course. (Same as History 306.)

340 Greek and Roman Athletics (3) A survey of Greek and Roman athletic festivals and events, and the role of athletes in ancient society; special focus on the Olympic Games. Writing-emphasis course.

351 Cicero and Sallust (3)
(RE) Prerequisite(s): 252.

352 Roman Lyric Poetry (3) Poetry of Catullus, Horace, and the elegists.
(RE) Prerequisite(s): 351.

362 Roman Law (3) Historical development of Roman law in the Classical period (50 BCE-250 CE) with particular attention to the analysis of case-law in the areas of contract, property, or delict. Writing-emphasis course.

381 Greek Civilization (3) Emphasis on the 6th and 5th centuries BC. Major aspects of ancient Greek civilization — religion, fine arts, political life, pan-Mediterranean relations, the prominence of Athens, and the role of modern archaeology in interpretation. Writing-emphasis course.

382 Roman Civilization (3) Emphasis on the late Republic and early Empire. Major aspects of ancient Roman civilization — political institutions, art and architecture, history, culture, and daily life. 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 2nd century AD with emphasis on Athens in the 5th century BC and Roman Italy in the 1st and 2nd centuries AD. Writing-emphasis course. (Same as Women’s Studies 393.)

384 Gender and Sexuality in Ancient Rome (3) Examines the Roman view of gender roles and sexuality. Evidence from literature, epigraphy, and material culture is used to consider what the ideals of behavior were for Roman women and men, what constituted deviation from these ideals, and how “real” Romans may actually have behaved. Writing-emphasis course.

401 Greek Poetry (3) Epic, lyric, drama. Authors vary. Repeatability: May be repeated. Maximum 9 hours. (RE) Prerequisite(s): 261.

402 Greek Prose (3) History, philosophy, and oratory. Authors vary. Repeatability: May be repeated. Maximum 9 hours. (RE) Prerequisite(s): 261.

405 Selected Readings from Greek Literature (3) For advanced students in Greek. The study of plays, historical writings, and poetry of ancient Greece in the original Greek. Repeatability: May be repeated. Maximum 9 hours. (RE) Prerequisite(s): 261.

406 Selected Readings from Greek Literature (3) For advanced students in Greek. The study of plays, historical writings, and poetry of ancient Greece in the original Greek. Repeatability: May be repeated. Maximum 9 hours. (RE) Prerequisite(s): 261.

414 Cicero and Techniques of Latin Prose Composition (3) For advanced students in Latin. Practice in prose composition, the writings of Cicero in the model. (RE) Prerequisite(s): 351 or 352.

431 Selected Readings from Latin Literature (3) For advanced students in Latin. Oratory, historical writings, and poetry of ancient Rome in the original Latin. Repeatability: May be repeated. Maximum 9 hours. (RE) Prerequisite(s): 351 or 352.

432 Selected Readings from Latin Literature (3) For advanced students in Latin. Oratory, historical writings, and poetry of ancient Rome in the original Latin. Repeatability: May be repeated. Maximum 9 hours. (RE) Prerequisite(s): 351 or 352.

435 Medieval Latin (3) Selected readings from the Latin prose and poetry of medieval Europe. (RE) Prerequisite(s): 351 or 352.

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 by 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. Repeatability: May be repeated. 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, and their international interactions 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.)

445 Ancient and Medieval Seafaring (3) Survey of seafaring in the Mediterranean and northern Europe from its very beginning, c. 11,000 BCE, until the late Middle Ages. Discussion of shipwrecks, iconographic evidence, and texts. Emphasis on ship construction and the evidence it provides about seafaring, naval warfare, technology, the exploitation of natural resources, levels of labor, social differences in society, and changes in the economy. Writing-emphasis course.

471 Special Topics in Medieval Latin Literature (3) Selected topics in Medieval Latin literature. Discussions, student presentations, examinations, papers. Writing-emphasis course. Repeatability: May be repeated. Maximum 9 hours. (DE) Prerequisite(s): 431, 432, or 435.

472 Latin Paleography (3) Introduction to the Latin hands used in Western Europe from the Roman through the Humanistic period, when most writing in the West was in Latin. The focus is on identifying and dating hands and on transcribing them accurately. Discussions, student presentations, examinations, papers. Writing-emphasis course. (DE) Prerequisite(s): 431, 432, or 435.

491 Foreign Study (1-15) Repeatability: May be repeated. Maximum 15 hours.

492 Off-Campus Study (1-15) Repeatability: May be repeated. Maximum 15 hours.

493 Independent Study (1-15) Repeatability: May be repeated. Maximum 15 hours.

Clinical Laboratory Science (247)

101 Introduction to Clinical Laboratory Science (2) Introduction to the profession for those investigating a career in clinical laboratory science. Emphasis on the scientific aspects and clinical significance of laboratory procedures in analytical, research, and management laboratories and career opportunities.

410 Microbiology (4) Laboratory work in bacteriology, mycology, and parasitology. Emphasis on pathogenic bacteria and fungi, their sources, methods of culture, techniques of identification, and evaluation of antibiotic sensitivity. Gross and qualitative chemical examination of feces and methods of identification of protozoa and helminth parasites of man. Registration Restriction(s): Clinical laboratory science major.

411 Microbiology (4) Laboratory work in bacteriology, mycology, and parasitology. Emphasis on pathogenic bacteria and fungi, their sources, methods of culture, techniques of identification, and evaluation of antibiotic sensitivity. Gross and qualitative chemical examination of feces and methods of identification of protozoa and helminth parasites of man. Registration Restriction(s): Clinical laboratory science major.

420 Clinical Chemistry (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 charactericstics, detection, and use of short half-life radioactive materials for in vivo procedures such as radioimmunoassay which utilize radioisotopes. Registration Restriction(s): Clinical laboratory science major.

421 Clinical Chemistry (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. Registration Restriction(s): Clinical laboratory science major.

430 Hematology and Clinical Microscopy (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. Registration Restriction(s): Clinical laboratory science major.
440 Immunohematology (3) Theory and practice in blood bank opera-
tion. Erythrocyte antigens and their normal and abnormal immunology.
Standard technical practices used in evaluating blood typing, cross-
matching, antibody detection, and preparation of blood components for
transfusion. Safety control methods standard to efficient blood bank.
Registration Restriction(s): Clinical laboratory science major.

441 Immunohematology (3) Theory and practice in blood bank opera-
tion. Erythrocyte antigens and their normal and abnormal immunology.
Standard technical practices used in evaluating blood typing, cross-
matching, antibody detection, and preparation of blood components for
transfusion. Safety control methods standard to efficient blood bank.
Registration Restriction(s): Clinical laboratory science major.

450 Clinical Serology and Immunology (2) Performance and interpre-
tation of broad range of clinical serological and immunological proce-
dures with emphasis on principles and clinical correlation. Formal lecture
series included.
Registration Restriction(s): Clinical laboratory science major.

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.
Registration Restriction(s): Clinical laboratory science major.

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.
Registration Restriction(s): Clinical laboratory science major.

College Scholars Honors (509)

317 College Scholars Seminar (1) Sequence (317 and 318) is required
of all College Scholars each year and may be taken in any order.
Grading Restriction: Satisfactory/No Credit grading only.
Repeatability: May be repeated. Maximum 8 hours.
Registration Restriction(s): College scholars major.

318 College Scholars Seminar (1) Sequence (317 and 318) is required of
all College Scholars each year and may be taken in any order.
Grading Restriction: Satisfactory/No Credit grading only.
Repeatability: May be repeated. Maximum 8 hours.
Registration Restriction(s): College scholars major.

491 College Honors: Foreign Study (1-15)
Repeatability: May be repeated. Maximum 15 hours.
Registration Restriction(s): College scholars major.

492 College Honors: Off-Campus Study (1-15)
Repeatability: May be repeated. Maximum 15 hours.
Registration Restriction(s): College scholars major.

493 College Honors: Independent Study (1-15)
Repeatability: May be repeated. Maximum 15 hours.
Registration Restriction(s): College scholars major.

498 Honors: College Scholars Studies (2-12) Designed for College
Scholars working on senior thesis, project, or performance.
Repeatability: May be repeated. Maximum 16 hours.
Registration Restriction(s): College scholars major.

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.

Communication Studies (250)

201 Introduction to Communication Studies (3) Fundamental theories
and practices with particular reference to interpersonal, group, organiza-
tional, and public communication.
(RE) Prerequisite(s): Communication and Information 150.

207 Honors: Introduction to Communication Studies (3) Analysis and
exploration of the fundamental theories and practices in communication
studies.
(RE) Prerequisite(s): 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, feel-
ings, and actions affect and are affected by the face-to-face communica-
tion 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 stud-
ies, interviewing, and formal presentations. (OC)

250 Advanced Public Speaking (3) Theory and practice of informative
and persuasive speaking.
(RE) Prerequisite(s): 210 or 240.

260 Communication and Society (3) Study of communication strate-
gies 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 Intercollegiate Forensics (1) For students actively participating in
intercollegiate debate.
Repeatability: May be repeated. Maximum 4 hours.

272 Intercollegiate Forensics (1) For students actively participating in
intercollegiate debate.
Repeatability: May be repeated. Maximum 4 hours.

300 Nonverbal Communication (3) Exploration of nonverbal communi-
cation from human communication perspective. Origins and research
usage and coding of nonverbal behavior. Research strategies and theo-
retical approaches.

310 Persuasion (3) Methods which contribute to effective and ineffective
persuasion. Topics include credibility, message construction, and receiv-
er 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 think-
ing in groups.

340 Research Methods in Communication Studies (3) Survey of con-
temporary methods used for research in communication studies. Emphasis
on interpreting and evaluating communication research reports.
(RE) Prerequisite(s): 201 or 207.
(RE) Corequisite(s): Mathematics 115 or Statistics 201.

350 Communication Theory (3) Analysis and critique of fundamental
theories with particular reference to interpersonal, group, organizational,
and public communication.
(RE) Prerequisite(s): 201 or 207.
(DE) Prerequisite(s): 340.

371 Intercollegiate Forensics (1) For students actively participating in
intercollegiate debate.
Repeatability: May be repeated. Maximum 4 hours.

372 Intercollegiate Forensics (1) For students actively participating in
intercollegiate debate.
Repeatability: May be repeated. Maximum 4 hours.

397 Honors Seminar (1) Comment(s): Required of students enrolled in the Honors program.

400 Topics in Communication Studies (3) Repeatability: May be repeated. Maximum 6 hours.
Comment(s): Topics, scope of subject matter, and prerequisites to be determined by department.

407 Honors Seminar (3) In-depth survey of communication research
topics. Topics rotate among health, interpersonal, organizational and
team, and public communication.
Repeatability: 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 communi-
cation 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 those variables of the communication process that affect the quality of human interaction both within and outside the organization.

445 Internship (1-3) Supervised career-related experiences using communication studies theories and techniques in government and for profit or nonprofit organizations, culminating in a written and oral report.

446 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.)

450 Propaganda (3) Study of political, commercial, and social propaganda in the United States from 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 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.)

491 Foreign Study (1-6) Participation in school-sponsored study-abroad program. Application forms and proposal deadlines available in school office. Repeatable: May be repeated. Maximum 15 hours.

492 Off-Campus Study (1-15) Repeatable: May be repeated. Maximum 6 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 and proposal deadlines available in school office. Repeatable: May be repeated. Maximum 3 hours may be applied to the major.

497 Senior Honors Thesis (3) Required of students enrolled in the Honors program.

498 Senior Honors Thesis (3) Required of students enrolled in the Honors program.

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. (RE) Prerequisite(s): 201 or 207. (DE) Prerequisite(s): 340 and 350. Recommended Background: 12 or more hours of communication studies courses. Registration Restriction(s): Minimum student level – senior.

Comparative and Experimental Medicine – Graduate School of 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.

420 Cross-Cultural Perspectives in World Literature (3) Literary perspectives and values in different time periods and cultures approached from an international context. Includes an introduction to the theory, methods, and objectives of comparative literature. Variable content. Writing-emphasis course.

421 Special Topics in Comparative Literature (3) Repeatable: May be repeated. Maximum 9 hours.

422 Special Topics in Comparative Literature (3) Content varies. Repeatable: May be repeated. Maximum 9 hours.

445 Modern Drama (3) (See English 452.)

454 Twentieth-Century International Novel (3) (See English 454.)

491 Foreign Study (1-6) Repeatable: May be repeated. Maximum 6 hours.

492 Off-Campus Study (1-6) Repeatable: May be repeated. Maximum 6 hours.

493 Independent Study (1-6) Repeatable: May be repeated. Maximum 6 hours.

Computer Science (266)

100 Introduction to Computers and Computing (4) Basic concepts of computer hardware and software. Microcomputer systems and workstations. Networking and the Internet. The interdisciplinary science of computing. (QR) Contact Hour Distribution: 3 hours lecture and 1 lab. Credit Restriction: May not be applied toward the computer science major.

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. (QR) Contact Hour Distribution: 3 hours lecture and 1 lab. Credit Restriction: Students who have received credit for 140 or 160 may not receive subsequent credit for 102 without consent of instructor. Students may not receive credit for both 102 and Electrical and Computer Engineering 206.

140 Data Structures (4) Advanced problem solving and algorithm development, structured programming, data structures and applications, I/O techniques, lists, queues, trees, algorithms, files. Contact Hour Distribution: 3 hours lecture and 1 lab. (RE) Prerequisite(s): 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, and assembly language programming. Contact Hour Distribution: 3 hours lecture and 1 lab. (RE) Prerequisite(s): 102.

291 Lower-Division Special Topics (1-3) Topics vary. Programming languages, operating systems, and application software packages. Repeatable: 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/awk, ed/sed, awk, perl, python, make, rcs, jgraph, gcc/cpp/purify/quantify. Grading Restriction: Satisfactory/No Credit grading only. (RE) Prerequisite(s): 140.

301 Introduction to Technical Computing (4) 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. Contact Hour Distribution: 3 hours lecture and 1 lab. Credit Restriction: Does not fulfill any requirements for the computer science major. (RE) Prerequisite(s): Mathematics 142.

340 Foundations of Software Engineering (4) Principles of analysis and design of information systems. Principles of program design and verification, formal objects, formal specifications. Contact Hour Distribution: 3 hours lecture and 1 lab. (RE) Prerequisite(s): 311.

350 Introduction to Technical Computing (4) 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. Contact Hour Distribution: 3 hours lecture and 1 lab. Credit Restriction: Does not fulfill any requirements for the computer science major. (RE) Prerequisite(s): Mathematics 142.

360 Systems Programming (4) Introduction to user-level systems programming, file control, process control, memory management, system utilities, network programming. Contact Hour Distribution: 3 hours lecture and 1 lab. (RE) Prerequisite(s): 302.
365 Programming Languages and Systems (4) Language paradigms (procedural, functional, object-oriented, logic), language design and implementation issues and language issues related to parallelism.

Contact Hour Distribution: 3 hours and 1 lab.

(Re) Prerequisite(s): 302.

370 Introduction to Scientific Computing (4) 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.

Contact Hour Distribution: 3 hours lecture and 1 lab.

Credit Restriction: Students may not receive credit for both Computer Science 370 and Mathematics 371.

(Re) Prerequisite(s): 140 and Mathematics 251.

(De) Prerequisite(s): 160.

380 Theory of Computation (3) Countability and diagonalization. Finite automata and regular sets. Push-down automata and context-free languages. Introduction to Turing machines and undecidability.

(Re) Prerequisite(s): 311.

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 computer science.

Includes required laboratory work.

(Re) Prerequisite(s): 360.

411 Senior Thesis I (3) Frontiers of computer science technology and research. Students write a senior thesis. Writing-emphasis course.

Registration Restriction(s): Minimum student level – senior.

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.

Repeatable: May be repeated. Maximum 9 hours.

Recommended Background: Completion of core courses.

430 Advanced Topics in Hardware Systems (3) Topics such as architecture, parallel processors, microprogramming, networks, and communications. Emphasis on faculty research.

Repeatable: May be repeated. Maximum 9 hours.

Recommended Background: Completion of core courses.

460 Advanced Topics in Software Systems (3) Topics such as operating systems, compilers, parallel computation, software engineering, database systems, and programming languages. Emphasis on faculty research.

Repeatable: May be repeated. Maximum 9 hours.

Recommended Background: Completion of core courses.

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.

Repeatable: May be repeated. Maximum 9 hours.

Recommended Background: Completion of core courses.

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.

Repeatable: May be repeated. Maximum 9 hours.

Recommended Background: Completion of core courses.

493 Independent Study (1-15) Special project in area of student's primary interests. 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.

Repeatable: May be repeated. Maximum 45 hours.

Credit Restriction: Maximum of 6 hours may be applied to the major.

Registration Permission: Consent of instructor.

494 Special Topics in Computer Science (1-3) Repeatable: May be repeated. Maximum 18 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.

Grading Restriction: Satisfactory/No Credit grading only.

Repeatable: May be repeated. Maximum 6 hours.

206 Facilitation of Technical Work Teams (3) Psychological and cultural dynamics of technical work team performance. Supervised experience in leading work teams.

Grading Restriction: Letter grade only.

Registration Restriction(s): Students in the College of Engineering; minimum student level – sophomore.

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.


Grading Restriction: Letter grade only.

Registration Restriction(s): Students in the College of Engineering; minimum student level – sophomore.

404 Special Topics (1-3) Instructor-initiated course offered at convenience of the department on various topics of current interest.

Repeatable: May be repeated. Maximum 15 hours.

406 Engineering Communication and Performance Field Work (3) Capstone experience for the engineering communication and performance minor.

Grading Restriction: Satisfactory/No Credit grading only.

(Re) Prerequisite(s): 306.

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 Skills for Counseling (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.

Repeatable: 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 schools and the broader society.

Registration Restriction(s): Qualification – admission to teacher education.

Dance (274)

101 Practicum: Dance Production (1) Supervised technical and production aspects of university dance company.

Repeatable: May be repeated. Maximum 2 hours.

201 Practicum: Dance Performance (1-2) Preparation and presentation of university dance company performances.

Repeatable: May be repeated. Maximum 16 hours.

Comment(s): Audition required.

210 Ballet: Level I (2) Instruction and practice in elementary classical ballet techniques.

Repeatable: May be repeated. Maximum 4 hours.

220 Jazz: Level I (2) Instruction and practice in elementary jazz dance styles and techniques.

Repeatable: May be repeated. Maximum 4 hours.

230 Modern: Level I (2) Instruction and practice in elementary modern dance techniques.

Repeatable: May be repeated. Maximum 4 hours.

240 Tap: Level I (2) Instruction and practice in elementary tap dance techniques.

Repeatable: May be repeated. Maximum 4 hours.
310 Ballet: Level II (2) Instruction and practice in intermediate classical ballet techniques.  
Repeatability: May be repeated. Maximum 12 hours.

320 Jazz: Level II (2) Instruction and practice in intermediate jazz dance styles and techniques.  
Repeatability: May be repeated. Maximum 12 hours.

330 Modern: Level II (2) Instruction and practice in intermediate modern dance styles and techniques.  
Repeatability: May be repeated. Maximum 12 hours.

340 Tap: Level II (2) Instruction and practice in intermediate tap dance techniques.  
Repeatability: May be repeated. Maximum 12 hours.

380 Special Topics (1-3) Selected disciplinary or professional areas of dance.  
Repeatability: May be repeated. Maximum 16 hours.

410 Ballet: Level III (2) Instruction and practice in advanced classical ballet techniques.  
Repeatability: May be repeated. Maximum 16 hours.

415 Teaching Creative Dance for Children (2) Theory, methods, materials, and practical experience in the presentation and integration of 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.  
Repeatability: May be repeated. Maximum 16 hours.

430 Modern: Level III (2) Instruction and practice in advanced modern dance techniques.  
Repeatability: May be repeated. Maximum 16 hours.

440 Composition I (2) Choreographic skills emphasizing the basic techniques and concepts of dance composition. This course focuses on the choreography of solos and duets.  
Recommended Background: Minimum of 4 hours of 310, 320, 330, 340, 410, 420, 430.

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.  
(RE) Corequisite(s): 440.

480 Dance History through the 19th Century (3) Survey of the dance of various societies and cultures from pre-history through the 19th century.

490 Dance in the 20th Century (3) Survey of the history and philosophy of dance in the 20th century.

493 Directed Independent Studies (1-3) Independent study in a specialized area with dance.  
Repeatability: 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.  
Registration Restriction(s): Minimum student level - Junior.

Ecology and Evolutionary Biology (278)

240 Human Anatomy (4) Gross and microanatomy of the human.  
Credit Restriction: May not be applied toward the ecology and evolutionary biology concentration.  
Contact Hour Distribution: 3 hours lecture and 3 hours lab.  
(DE) Prerequisite(s): Biology 130 or Biology 101 and 102 or Biology 111 and 112.

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.  
Contact Hour Distribution: Includes occasional field trips.  
Credit Restriction: May not be applied toward the ecology and evolutionary biology concentration.

305 Evolution and Society (3) Issues and controversies surrounding the teaching and learning of evolution in America today. Writing-emphasis course.  
(Same as Anthropology 305.)  
Credit Restriction: May not be applied toward the ecology and evolutionary biology concentration.  
(DE) Prerequisite(s): Biology 130 or Biology 101 and 102 or Biology 111 and 112 or Anthropology 110.

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.  
(RE) Prerequisite(s): Biology 140.

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.  
Contact Hour Distribution: 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.)

400 Undergraduate Research (1-2) Research projects under supervision of faculty.  
Repeatability: May be repeated. Maximum 8 hours.  
Credit Restriction: Maximum of 4 hours may be applied toward the biological sciences major.  
Registration Permission: Consent of instructor.

407 Senior Honors Thesis (3) Written preparation and oral presentation of faculty-supervised student research.  
(RE) Prerequisite(s): 400.  
Registration Restriction(s): Biological sciences major/honors ecology and evolutionary biology concentration.

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).  
(DE) Prerequisite(s): Biology 102 or Biology 111 or Biology 130.

413 Art and Organism - Integrative Biology of Aesthetic Experience (3) An integrative approach to fundamental concepts of developmental biology, ecology, evolutionary biology, and physiology applied to culture, art and aesthetic experience.  
(Same as University Studies 413.)

414 Plant Anatomy (3) Cells, tissues, and organs. Their development in vegetative and reproductive structures of vascular plants. Emphasis on seed plants.  
(DE) Prerequisite(s): Biology 111 and 112 or Biology 130 and 140.

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. Includes periodic field trips or laboratories.  
(RE) Prerequisite(s): Biology 250.

426 Plant-Animal Interactions (3) Introduction to the evolutionary and ecological aspects of interactions between plants and animals, including herbivory, pollination, and seed dispersal. Emphasis is on historical development of the field, discussions of primary literature, design of experiments, and writing.  
(RE) Prerequisite(s): Biology 250.

433 Plant Ecology (3) Interactions between individuals, species, communities and their environments. Circulation of energy and matter in ecosystems. Includes weekly field trips or laboratory periods and at least two weekend field trips.  
(RE) Prerequisite(s): Biology 250.

446 Introduction to Oceanography (4) Basic oceanography, including physical, chemical, geological, and biological processes and patterns. Emphasis on oceanic subsystems, such as upwellings, polar oceans, hydrothermal vents, gyres, coral reefs, estuaries, and coastal regions. Field trip to coast required.  
(RE) Prerequisite(s): Chemistry 130 and Biology 250.

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.  
(Same as Psychology 459.)  
(RE) Corequisite(s): 450.

(RE) Prerequisite(s): Biology 240.

461 Special Topics in Organismal Biology (3) Evolution, ecology, biogeography, classification, and anatomy of selected animal and plant taxa.  
Repeatability: May be repeated if topic differs. Maximum 12 hours.  
(RE) Prerequisite(s): Biology 240.
465 Evolutionary and Functional Vertebrate Morphology (4) A detailed study of the structure and function of 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.

470 Aquatic Ecology (3) Introduction to the physio-chemical nature of inland waters with description of biotic communities and their interrelationships.

474 Ichthyology (4) Evolution, classification, collection and identification, distribution and biology of fishes with emphasis on freshwater fauna of eastern North America.

484 Conservation Biology (3) Application of principles and techniques of ecological research to conservation of biological diversity at genetic, population, community, and ecosystem levels.

490 Undergraduate Seminar (1) Weekly departmental research seminar presenting current research in the areas of ecology, behavior and evolutionary biology by UT faculty and researchers from around the world.

493 Independent Study (1-9) Independent study under the direction of a faculty member.

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, and biodiversity and conservation.

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) Comment(s): 28 ACT composite or 1250 composite SAT required.

300 Special Topics I (3) Variable topics treated at the introductory level. (RE) Prerequisite(s): 201 or 207.

311 Intermediate Microeconomics (3) Theories of consumer behavior, production of costs, of price and behavior of firms in perfectly competitive, monopolistic, and imperfectly competitive markets, input prices, income distribution, welfare, and general equilibrium.

312 Managerial Economics (3) Microeconomic fundamentals of managerial decision-making and strategy intended for business students. Topics include supply and demand interactions, production and cost, consumer behavior and demand, optimization, market structure, pricing strategy, risk and uncertainty, and game theory.

313 Intermediate Macroeconomics (3) Measurement of income and prices, aggregate demand, output, employment, price determination, inflation, business fluctuations, fiscal and monetary policies and growth. (RE) Prerequisite(s): 201 and Statistics 201.

322 The Global Economy: Trade and Development (3) Analyses of international trade and finance and their effects on economic development. Utilization of a policy-oriented approach drawing upon introductory economic principles. Overview of relevant topics, such as theories of economic development, poverty and income inequality, comparative advantage and commodity composition of trade, regional economic integration, foreign investment, finance, and debt. Writing-emphasis course.

331 Government and Business (3) Antitrust and regulatory economics, problems in regulation and social control of business organization, oligopoly models. Writing-emphasis course.

333 Law and Economics (3) Analysis of legal decisions and rulings as they affect the allocation and distribution of resources in the economy. Topics include property law, contracts, torts and administrative law with applications drawn from various areas in economics and case law. Writing-emphasis course.


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. Writing-emphasis course. (RE) Prerequisite(s): 201 or 207.

362 Environmental and Natural Resource Policy (3) Application of introductory microeconomic principles to contemporary environmental and natural resource policy issues such as air pollution, global climate change, population growth, forest management, and endangered species protection. Writing-emphasis course. (RE) Prerequisite(s): 201 or 207.

371 Public Finance: Expenditure Analysis (3) Problems of collective consumption, external effects, public investment, social decision making. Writing-emphasis course. (RE) Prerequisite(s): 201 or 207.

381 Introduction to Econometrics (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. (RE) Corequisite(s): 311 or 313.

400 Special Topics II (3) Variable topics for advanced students. (RE) Prerequisites: 311 and 313. Registration permission: Consent of instructor.

413 Macroeconomics: Business Cycles and Growth (3) Analysis of macroeconomic short-run fluctuations and long-term growth. Coverage will also include the role of monetary and fiscal policy on aggregate output, employment, and interest rates.

421 International Economics (3) Balance of payments, exchange rate determination, monetary and fiscal policies, monetary arrangements, comparative advantage, tariff and nontariff trade distortions, protection arguments, and regional integration with analyses based upon intermediate-level economic theory. (RE) Prerequisite(s): 311.

435 Industrial Organization (3) Monopoly and competition in United States economy. Interrelationship of market structure, business behavior, and economic performance. (RE) Prerequisite(s): 311.

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, and regulation of health care markets. Writing-emphasis course. (RE) Prerequisite(s): 311.

441 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, and mobility. (RE) Prerequisite(s): 311.
463 Environmental Economics (3) Economic foundations for public decision-making about environmental resources utilizing tools from intermediate microeconomic theory. Emphasis on the welfare economic approach for the provision of public goods with specific emphasis on market failure, externalities, benefit-cost analysis, and methods for valuing environmental resources and human health. 

(Re) Prerequisite(s): 311.

472 Public Finance: Taxation and Fiscal Federalism (3) Analysis of federal, state, and local government revenue systems to include individual and corporate income, sales and property taxes, and other tax and non-tax revenue sources. Consideration of current policy issues and relations among various levels of government. 

(Re) Prerequisite: 311.

482 Introduction to Mathematical Economics (3) Application of basic mathematical tools (e.g., calculus, matrix algebra, etc.) to major topics of economic theory. 

(Re) Prerequisite(s): 311.

Comment(s): Grade of B or better in 311 is required.

492 Economics Off-Campus Study (1-3) Internship or other supervised economic experience with firm, government agency, or other relevant organization. Student must seek approval from a faculty member prior to starting work, register for credit in the first semester following work completion, and write a paper describing the economic nature of the work performed. 

Grading Restriction: Satisfactory/No Credit grading only.

Repeatability: May be repeated. Maximum 3 hours. 

(Re) Prerequisite(s): 311 and 313.

Registration Restriction(s): Economics major.

Registration Permission: Consent of faculty member.

493 Independent Study (1-3) Directed research on subjects of mutual interest to student and faculty member. Student must meet with the faculty member before registering. 

Repeatability: May be repeated. Maximum 3 hours. 

(Re) Prerequisite(s): 311 and 313.

Comment(s): GPA of 3.00 or better in economics courses required.

Registration Restriction(s): Economics major.

Registration Permission: Consent of faculty member.

498 Honors Thesis (3) Completion of undergraduate thesis. 

Registration Restriction(s): Honors economics concentration.

Registration Permission: Consent of faculty advisor.

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 when appropriate, and work as teams to prepare economic analyses of selected economic problems facing modern society. Writing-emphasis course. 

(Re) Prerequisite(s): 311 and 313.

Recommended Background: 9 other hours of upper-division economics courses.

Registration Restriction(s): Economics major.

Education (289)

100 Special Topics (1-3) Study in selected disciplinary or professional areas presented 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. 

Repeatability: 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, and 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. 

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. 

(Re) Prerequisite(s): 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.

340 Principles of Interpreting (3) Theory and psycholinguistic processes involved in interpreting and transliterating between English and American Sign Language. Ethics and etiquette of interpreting in educational and community placements. History, organizations, certification procedures, and trends and issues related to the interpreting profession.

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 register and vocabulary items and interpreting in a manner appropriate to the context. Attention is also given to cross-cultural communication issues.

431 American Sign Language III (3) Sequence (431-432) 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. 

(Re) Prerequisite(s): 226.

432 American Sign Language IV (3) Sequence (431-432) 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.

(Re) Prerequisite(s): 431.

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.

(Re) Prerequisite(s): 431.

440 Educational Interpreting Field Work (6) Practical field experience within approved and supervised mainstream settings. Development of specific interpreting skills. Provides a direct service experience in a supportive learning environment.

Grading Restriction: 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.

401 Professional Studies: Applied Educational Psychology (3) Application of concepts, principles, techniques, and models from educational psychology to facilitate student learning and creation of effective classroom environments.

Registration Restriction(s): Qualification—admission to teacher education.

404 Special Topics (1-3) Instructor-initiated course offered at convenience of the department on various topics of current interest. 

Repeatability: May be repeated. Maximum 15 hours.

431 Personality and Mental Health (3) (See Counselor Education 431.)
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.
Recommended Background: Introductory course in psychology.

493 Independent Study (1-15) Independent investigation of problems in educational and counseling psychology.
Repeatability: 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.
Credit Restriction: Students may not receive credit for both 206 and Computer Science 102.

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.

Registration Permission: Consent of associate department head.

301 Circuits and Electro Mechanical Components (3) DC and AC circuits, transients, transformers, motors, and generators.
(RE) Prerequisite(s): Mathematics 231.

302 Electronics and Computer Circuits (3) Analog circuits, operational amplifiers, digital systems, logic circuits, and semiconductor devices.
(RE) Prerequisite(s): 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, and correlation of time signals.
(RE) Prerequisite(s): Mathematics 231.

315 Signals and Systems I (3) Continuous- and discrete-time functions, function transformations, signal energy and power, solution of linear differential equations, system properties, convolution, continuous and discrete-time Fourier series, continuous and discrete-time Fourier transforms, Bode diagrams, and correlation.
(RE) Prerequisite(s): 302.

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, and discrete-time state variables.
(RE) Prerequisite(s): 315.

(RE) Prerequisite(s): 300.

(RE) Prerequisite(s): 300.

(RE) Prerequisite(s): 335.

341 Fields (3) Coulomb’s law, Gauss’ law, Ampère’s law, Maxwell’s equations for electrostatic and magnetostatic cases. Maxwell’s equations for dynamic case, dynamic potentials, and uniform plane wave propagation. Transmission lines.
(NE) Prerequisite(s): 300 and Mathematics 241.
(DE) Prerequisite(s): 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, and spread-spectrum. Includes Level 1 design projects which require laboratory experiments.

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, and issues in computer security. Includes Level 1 design projects which require laboratory work.
(RE) Prerequisite(s): 206 and 255.

395 Junior Seminar (1) Presentations and discussions related to professional development, including registration, ethics, and current topics in electrical engineering.
Grading Restriction: Satisfactory/No Credit grading only.
(RE) Prerequisite(s): 300.

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 and computer engineering. Includes Level 3 design projects which require laboratory work.
(OC) (WC) (RE) Prerequisite(s): 316 and 342.
(DE) Prerequisite(s): 355.

415 Automatic Control Systems (3) Automatic control systems for physical systems with linear models. The methods presented include steady-state error analysis, stability, root locus, Nyquist theory, and Bode plots.
(RE) Prerequisite(s): 316.

416 Computer Control Systems (3) Computer-controlled systems using state variables and z-transform model representations with sampling theory and its effect of digital control design. Design of digital controllers in both the state space and frequency domains. Includes Level 1 design projects.
(RE) Prerequisite(s): 316.

421 Electric Energy Systems (3) Structure and operation of the electrical energy grid, load flow, economic loading, planning, control, and reliability. Balanced and unbalanced faults, system protection, and system stability. Includes Level 1 design projects.
(RE) Prerequisite(s): 316 and 325.

(RE) Prerequisite(s): 421.

431 Operational Amplifier Circuits (3) Linear and non-linear active circuits using commercial operational amplifiers. Includes operational instrumentation, isolation, bridge, rms and logarithmic converters, multipliers and function generators, rectifiers, references, active filters, modulation and demodulation, and 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.
(RE) Prerequisite(s): 316 and 336.
(DE) Prerequisite(s): 342.

432 Electronic Amplifiers (3) Feedback amplifier principles, wideband linear amplifier design, low-noise preamplifier design, and audio power amplifier design. Introduction to radio-frequency amplifier design and oscillator principles. Includes laboratory experiments and design projects. Level 2 design projects require laboratory work.
(RE) Prerequisite(s): 431.
433 Introduction to VLSI (3) Investigates the behavior of microelectronic devices in digital circuits and helps the students develop an understanding of the relationship between the device physics and the device static and dynamic characteristics. Includes laboratory assignments which are designed to give advanced undergraduate students a working knowledge of CMOS digital integrated circuit technology, circuit analysis methodologies, including simulation and physical layout of CMOS digital circuit structures.

(DE) Prerequisite(s): 335.

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, and 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.

(Re) Prerequisite(s): 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.

(Re) Prerequisite(s): 316 and 341.
(De) Prerequisite(s): 342.

446 Electromagnetic Compatibility (3) Principles and practices to avoid interference among and within electrical devices. Parameters and coupling for dipole, biconical, and log-periodic antennas. High-frequency effects in circuit elements. Radiated and conducted emissions and susceptibility. Crosstalk, shielding, electrostatic discharge, and EMC regulations. Includes Level 1 design projects which require laboratory work.

(Re) Prerequisite(s): 316 and 341.
(De) Prerequisite(s): 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, and interfacing. Includes Level 1 design projects which require laboratory work.

(Re) Prerequisite(s): 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.

(Re) Prerequisite(s): 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.

(Re) Prerequisite(s): 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.

(Re) Prerequisite(s): 206.

472 Introduction to Digital Image Processing (3) Basic methods for digitizing, storing, processing, and displaying images. Computational procedures for image enhancement, restoration, coding, and segmentation. Includes Level 1 design projects.

(Re) Prerequisite(s): 316.

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.

(Re) Prerequisite(s): 316 and 325.
(De) Prerequisite(s): 336.

482 Power Electronic Circuits (3) Voltage-fed inverters, PWM principles, control of inverters, dc-dc converters, dc machine drives, resonance converters, step motor drives, brushless dc machine principles. Includes Level 1 design projects.

(Re) Prerequisite(s): 481.

491 Special Topics (3) Topics relating to basic design and current practice. Includes Level 1 or Level 2 design projects which may require laboratory work. Repeatability: May not be repeated for credit. Course may not be repeated to satisfy senior requirements for graduation.

495 Senior Seminar (1) Current topics in electrical engineering. Repeatability: May not be repeated for credit.

Elementary Education (322)

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. Graduation Restriction: Satisfactory/No Credit grading only. Repeatability: May be repeated. Maximum 3 hours.

(Re) Corequisite(s): 422.
Registration Restriction(s): Qualification – admission to teacher education.

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. Must be taken prior to professional internship year.

Registration Restriction(s): Qualification – admission to teacher education.

424 Studies in Elementary Education (1-3) Variable topics on teaching in early elementary (K-3), middle elementary (4-8), and skills (K-8). Repeatability: May be repeated. Maximum 8 hours.

Registration Restriction(s): Qualification – admission to teacher education. Registration Permission: Consent of instructor.

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 education.

Registration Restriction(s): Qualification – admission to teacher education.

Engineering Fundamentals (323)

100 Engineering Skills Development (3) Exercises in the skills and tools essential to the practice of engineering.

Graduation Restriction: Satisfactory/No Credit grading only. Repeatability: May be repeated. Maximum 3 hours.

(Re) Credit Restriction: May not be applied toward any engineering degree.
Registration Permission: Consent of instructor.

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 looping, and the development and implementation of logic flow diagrams.

(Re) Corequisite(s): 151 or 157.
Comment(s): 153 is an acceptable corequisite for transfer students.

151 Physics for Engineers I (4) Calculus-based study of basic physics concepts, including vectors, kinematics, Newton’s laws, forces, work-energy, and impulse-momentum. Introduction to team work. Introduction to the engineering disciplines. Examination of engineering principles and design issues. Oral and written presentation skills.

Grading Restriction: A, B, C, No Credit grading.
(Re) Corequisite(s): 105 and Mathematics 141.
Comment(s): A higher level mathematics course in the engineering curriculum is an acceptable corequisite.

152 Physics for Engineers II (4) Calculus-based study of basic physics concepts, including rotational dynamics, statics, oscillations, waves, fluids, heat and temperature, and first and second law of thermodynamics. Introduction to team work. Introduction to the engineering disciplines. Examination of engineering principles and design issues. Oral and written presentation skills.

(Re) Prerequisite(s): 151.
(Re) Corequisite(s): Mathematics 142.

153 Introduction to Engineering (2) Introduction to engineering for entering students with previous credit in mechanics physics. Introduction to the engineering profession and disciplines. Introduction to engineering problem solving and design through individual and team projects. Oral and written reports required.
Recommended Background: Advanced placement or transfer credit for calculus-based mechanics physics.

157 Honors: Physics for Engineers I (4) Honors version of 151 for well-prepared students.

Grading Restriction: A, B, C, No Credit grading.
(Re) Corequisite(s): Mathematics 141.
Comment(s): A higher level mathematics course in the engineering curriculum is an acceptable corequisite.
Registration Restriction(s): Qualification – admission to Chancellor’s Honors Program.

158 Honors: Physics for Engineers II (4) Honors version of 152.

(Re) Corequisite(s): Mathematics 142.
Comment(s): A higher level mathematics course in the engineering curriculum is an acceptable corequisite.
Registration Restriction(s): Qualification – admission to Chancellor’s Honors Program.
202 Engineering Mechanics (2) Review of vector algebra. Statics of two-dimensional trusses and frames, including methods of joints and sections. Geometric properties of cross sections, including first and second moments and location of centroid. Inertial properties of rigid bodies, including moment of inertia and location of mass center. (RE Corequisites(s): 152 and Mathematics 142.

230 Computer-Solution of Engineering Problems (2) Primary focus is on development of computer programs in a modern programming language to solve engineering problems. (RE) Prerequisite(s): 152.

301 Engineering Career Planning and Placement (1) Fundamentals of seeking professional employment, including resume construction, interview preparation, contacting prospects, networking, business etiquette, and the entire job-seeking process. Intended for last-term juniors. Grading Restriction: Satisfactory/No Credit grading only.

333 Co-op/Intern Experience in Engineering (1) Technical report writing and/or presentation is required. Student must be officially registered with the Office of Professional Practice in order to register for this course. Grading Restriction(s): Satisfactory / No Credit grading only. Repeatability: May be repeated: Maximum 3 hours. Registration Permit: Consent of instructor.

402 Fundamentals of Engineering (1) Review of topics covered on the general morning session of the Fundamentals of Engineering exam. Comment(s): Mechanical, aerospace, biomedical engineering majors must enroll for letter grade.

Registration Restriction(s): Majors in the College of Engineering; minimum student level—senior.

English (339)

101 English Composition I (3) Intensive instruction in writing, focusing on analysis and argument. Strategies for reading critically, analyzing texts from diverse perspectives, developing substantive arguments through systematic revision, addressing specific audiences, integrating sources, and expressing ideas with clarity and correctness. Writing-emphasis course. Grading Restriction: A, B, C. No Credit grading.

Comment(s): Students wishing additional help with writing should also register for English 103.

102 English Composition II (3) Advancing concepts introduced in English 101. Intensive writing instruction focused on inquiry and research. Strategies for formulating and investigating questions, locating and evaluating information, using varied sources and research methods, developing positions on intercultural and interdisciplinary issues from diverse texts (print, digital, and multimedia), and presenting research using appropriate rhetorical conventions. Writing-emphasis course. (WC) Grading Restriction: A, B, C. No Credit grading.

(RE) Prerequisite(s): 101. (RE) Prerequisite(s): 101. Comment(s): Students wishing additional help with writing should also register for English 104.

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. Grading Restriction: Satisfactory/No Credit grading only.

Credit Restriction: To receive credit, students must participate at least two hours per week and must also pass the 101 class in which they are currently enrolled. (RE) Corequisites(s): 101.

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. Grading Restriction: Satisfactory/No Credit grading only.

Credit Restriction: 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. (RE) Prerequisite(s): 101. (RE) Corequisites(s): 102.

118 Honors: English Composition (3) Grading scale and workload are same as in regular sequence though course proceeds at an accelerated pace. Emphasis on argumentation, critical inquiry, rhetorical analysis, and research methods. May include the study of a long work of literature or nonfiction in addition to a selection of interdisciplinary readings. Grading Restriction: A, B, C. No Credit grading.

Credit Restriction: Students receiving a passing grade below B in 118 will complete the English Composition requirement by taking 102. Students receiving a grade of B or above will complete their freshman English requirements by choosing 102, a sophomore-level course in the English Department, or 355. Comment(s): ACT English and composite scores at or above 29 or SAT critical reading and composite scores of 680 and 1280 required.

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. Contact Hour Distribution: Meets 4 hours a week. Comment(s): Admission by English placement exam. Required of all non-native English-speaking students who demonstrate on the English Placement Examination a need for work in English structures, reading, or writing.


132 Composition for Non-Native Speakers of English II (3) Writing based on reading and discussion. Analysis of works of literature. Emphasis on research techniques and writing research papers. Individual conferences. Grading Restriction: A, B, C. No Credit grading. (RE) Prerequisite(s): 101 or 131. Comment(s): Admission by English placement exam.

201 British Literature I: Beowulf through Johnson (3) Major literary works from three periods – Middle Ages, Renaissance and Restoration, and 18th century. Writing-emphasis course. (AH) (RE) Prerequisite(s): 102 or 118.

202 British Literature II: Wordsworth to the Present (3) Major literary works from three periods – Romantic, Victorian, and 20th century. Writing-emphasis course. (AH) (RE) Prerequisite(s): 102 or 118.

206 Introduction to Shakespeare (3) An overview of Shakespeare’s world and his work. (AH) (WC)

207 Honors: British Literature I (3) Enriched section of 201. (AH) (RE) Prerequisite(s): 102 or 118. Registration Restriction(s): 3.25 GPA.

208 Honors: British Literature II (3) Enriched section of 202. (AH) (RE) Prerequisite(s): 102 or 118. Registration Restriction(s): 3.25 GPA.

221 World Literature I: Ancient through Early Modern (3) Writing-emphasis course. (AH) (RE) Prerequisite(s): 102 or 118.

222 World Literature II: The Eighteenth-Century to the Present (3) Writing-emphasis course. (AH) (RE) Prerequisite(s): 102 or 118.

225 Introduction to African Literature (3) (See Africana Studies 225.) (AH)

226 Introduction to Caribbean Literature (3) Survey of the major genres in Caribbean literature. Course makes cross-cultural and cross-nation comparisons: general overview of themes and styles. Major authors may include: Naipaul, Rhone, Brathwaite, Hodge, Mail, Lovelace, and Marshall, Writing-emphasis course. (Same as Africana Studies 226.) (AH) (RE) Prerequisite(s): 102 or 118.

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) (RE) Prerequisite(s): 102 or 118.

232 American Literature II: Civil War to the Present (3) Development of American literature from Civil War to the present. Writing-emphasis course. (AH) (RE) Prerequisite(s): 102 or 118.

233 Major Black Writers (3) Black American literature as a literary tradition. Writing-emphasis course. (Same as Africana Studies 233.) (AH) (RE) Prerequisite(s): 102 or 118.

237 Honors: American Literature I: Colonial Era to the Civil War (3) Enriched section of 231. (AH) (RE) Prerequisite(s): 102 or 118. Registration Restriction(s): 3.25 GPA.

238 Honors: American Literature II: Civil War to the Present (3) Enriched section of 232. (AH) (RE) Prerequisite(s): 102 or 118. Registration Restriction(s): 3.25 GPA.

251 Introduction to Poetry (3) Poetry as a distinct mode of artistic expression. Critical tools for interpretive reading of poems. Writing-emphasis course. (AH) (RE) Prerequisite(s): 102 or 118.
252 Introduction to Drama (3) Critical tools for perceptive reading of play texts. Writing-emphasis course. (AH) (RE) Prerequisite(s): 102 or 118.

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) (RE) Prerequisite(s): 102 or 118.

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. See Timetable for topics. (AH) (WC) (RE) Prerequisite(s): 102 or 118.

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) (RE) Prerequisite(s): 102 or 118.

262 Introduction to Poetry Writing (3) Practice in writing poetry, combined with study of models and techniques. Writing-emphasis course. (RE) Prerequisite(s): 102 or 118.

264 Introduction to Fiction Writing (3) Practice in writing fiction, combined with study of models and techniques. Writing-emphasis course. (RE) Prerequisite(s): 102 or 118.

281 Introduction to Film Studies (3) Selected world cinema feature films. Critical techniques necessary for understanding and analysis of narrative cinema. Schematics of film expression and contours of film history. Writing-emphasis course. (Same as Cinema Studies 281.) (RE) Prerequisite(s): 102 or 118.

295 Business and Technical Writing (3) Principles of written communication in science and business. (WC) (RE) Prerequisite(s): 102 or 118.

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. (RE) Prerequisite(s): 102 or 118.

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. (RE) Prerequisite(s): 102 or 118.

311 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.) (RE) Prerequisite(s): 102 or 118.

315 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 Africana Studies 331.) (RE) Prerequisite(s): 102 or 118.

331 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.) (RE) Prerequisite(s): 102 or 118.

332 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 Africana Studies 333.) (RE) Prerequisite(s): 102 or 118.

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.) (RE) Prerequisite(s): 102 or 118.

335 African Literature (3) (See Africana Studies 335.)

336 Caribbean Literature (3) Survey of the major works of Caribbean literature; emphasis on poetry, drama, prose fiction, applicable theory and critical terms. Major elements may include: Brodber, Rhone, Lamming, Brathwaite, Naipul, Walcott, Selvon, Kincaid, and Marshall. Writing-emphasis course. (Same as Africana Studies 336.) (RE) Prerequisite(s): 102 or 118.

351 The Short Story (3) American, British, and international. Content varies. (RE) Prerequisite(s): 102 or 118.

355 Rhetoric and Writing (3) Strategies of writing on personal and academic subjects. Discussion of student and professional writing. (WC) (RE) Prerequisite(s): 102 or 118.

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. (WC) (RE) Prerequisite(s): 102 or 118. Registration Restriction(s): Minimum student level – junior.

363 Writing Poetry (3) Introduction to writing poetry. (WC) (RE) Prerequisite(s): 102 or 118.

364 Writing Fiction (3) Introduction to writing novels and short stories. (WC) (RE) Prerequisite(s): 102 or 118.

365 Writing the Screenplay (3) Introduction to writing screenplays. (Same as Cinema Studies 365.) (RE) Prerequisite(s): 102 or 118.

371 Foundations of the English Language (3) Phonology, morphology, and syntax of English. History of the English language to 1800. (Same as Linguistics 371.) (RE) Prerequisite(s): 102 or 118.

372 The Structure of Modern English (3) Descriptive study of contemporary English with emphasis on phrase, clause, and sentence structure. (Same as Linguistics 372.) (RE) Prerequisite(s): 102 or 118.

376 Colloquium in Literature (3) Methods and objectives of literary study. Conferences to plan student’s program in major. (RE) Prerequisite(s): 102 or 118. Recommended Background: 200-level literature package.

381 American Tales, Songs, and Material Culture: An Introduction to Folklore (3) Modern folklore/folk-life studies. Emphasis upon folktales, tall tales, myth, legend, folk balladry and music, proverbs, riddles, superstitions, games, food, crafts, art, and architecture. (Same as American Studies 381.) (RE) Prerequisite(s): 102 or 118.

385 Literature of the English Bible (3) A literary and historical approach to the Bible, including characteristics of its narrative and poetic art, and analysis of the different types of literature found in it: myth, legend, folklore, law, history, biography, poetry, prophecy, and apocalypse. (Same as Religious Studies 385.) (RE) Prerequisite(s): 102 or 118.

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. (WC) (RE) Prerequisite(s): 102 or 118. Comment(s): Enrollment limited to 15. See Director of Undergraduate Studies in English for details.

401 Medieval Literature (3) Reading and analysis of a selection of literary works from the Old and Middle English period, as well as some continental texts; most will be read in modern English translation, and no previous knowledge of Middle English is required. Writing-emphasis course. (Same as Medieval Studies 405.) (RE) Prerequisite(s): 102 or 118.

402 Chaucer (3) Reading and analysis of the Canterbury Tales and Troilus and Criseyde in Middle English. (Same as Medieval Studies 406.) (RE) Prerequisite(s): 102 or 118.

403 Introduction to Middle English (3) A survey of the language and literature of England from the 12th through the 15th centuries. Reading of prose works and shorter poetry will be done in Middle English with special attention paid to grammar, style, dialect, and language change. The class will explore the culture of medieval England through critical essays, histories, and supplementary texts in translation.

404 Shakespeare I: Early Plays (3) Shakespeare’s dramatic achievement before 1601. Reading and discussion of selected plays from romantic comedies, including Twelfth Night; English histories, including Henry IV; and early tragedy, including Hamlet. (RE) Prerequisite(s): 102 or 118.

405 Shakespeare II: Later Plays (3) Shakespeare’s dramatic achievement between 1601 and 1613. Reading and discussion of selected plays from great tragedies, including Othello; problem plays, including Measure for Measure; and dramatic romances, including The Tempest. (RE) Prerequisite(s): 102 or 118.

406 Renaissance Drama (3) English theatre between 1590 and 1640. Representative plays by Shakespeare’s contemporaries – Marlowe, Webster, and Jonson. (RE) Prerequisite(s): 102 or 118.
409 Spenser and his Contemporaries (3) Principal achievements in prose and poetry of 16th-century authors — Spenser, Wyatt, Marlowe, More, Sidney, and Bacon.

(RE) Prerequisite(s): 102 or 118.


(Repeatability: May be repeated. Maximum 6 hours.)

411 Literature of the Restoration and Early 18th Century: Dryden to Pope (3) Survey of English literature and culture from 1660 to 1745.

(Repeatability: May be repeated. Maximum 6 hours.)

412 Literature of the Later 18th Century: Johnson to Burns (3) Survey of English literature and culture from 1745 to 1800.

(Repeatability: May be repeated. Maximum 6 hours.)

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.

(Repeatability: May be repeated. Maximum 6 hours.)

414 Romantic Poetry and Prose I (3) Emphasis on Wordsworth, Coleridge, and Blake with readings from Lamb, De Quincey, and other prose writers.

(Repeatability: May be repeated. Maximum 6 hours.)

415 Romantic Poetry and Prose II (3) Emphasis on Keats, Shelley and Byron with readings from Hazlitt, Peacock, and other prose writers.

(Repeatability: May be repeated. Maximum 6 hours.)

416 Early Victorian Literature (3) May include poetry by Tennyson and the Brownings; prose by Carlyle, Newman, and Mill.

(Repeatability: May be repeated. Maximum 6 hours.)

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.

(Repeatability: May be repeated. Maximum 6 hours.)

420 The 19th-Century British Novel (3) Major novelists from Scott to Hardy.

(Repeatability: May be repeated. Maximum 6 hours.)

421 Modern British Novel (3) Authors such as Joyce and Woolff through contemporary British fiction writers.

(Repeatability: May be repeated. Maximum 6 hours.)

422 Women Writers in Britain (3) Emphasis on the literary consciousness and works of women writers in Britain. Course content will vary. Authors covered may include Marie de France, Margery Kempe, Aemilia Lanyer, Elizabeth Cary, Aphra Behn, Frances Burney, Mary Wollstonecraft, Mary Shelley, George Eliot, Virginia Woolf, and Doris Lessing.

(Repeatable: May be repeated. Maximum 6 hours.)

423 Colonial and Post-Colonial Literature (3) Emphasis on historical and theoretical methodologies for reading colonial and post-colonial literature.

(Repeatable: May be repeated with instructor’s consent. Maximum 6 hours.)

431 Early American Literature (3) From the earliest texts to 1830, including exploration and discovery, Native American, colonial, revolutionary, and early national works.

(Repeatable: May be repeated. Maximum 6 hours.)

432 American Romanticism and Transcendentalism (3) Prose and poetry of the American Renaissance from 1830 to the end of the Civil War. Includes writers such as Cooper, Emerson, Fuller, Poe, Thoreau, Hawthorne, Melville, Douglass, Jacobs, Whitman, and Dickinson.

(Repeatable: May be repeated. Maximum 6 hours.)

433 American Realism and Naturalism (3) Literature from the time of the Civil War to World War I. Includes writers such as Alcott, Twain, Howells, James, Jewett, Harper, Crane, Norris, and Wharton.

(Repeatable: May be repeated. Maximum 6 hours.)

434 Modern American Literature (3) World War I to the present.

(Repeatable: May be repeated. Maximum 6 hours.)

435 American Novel before 1900 (3) Traces the development of the American novel from the late 18th to the late 19th centuries. Includes such writers as Rowson, Brown, Cooper, Hawthorne, Melville, Stowe, James, Twain, and Dreiser.

(Repeatable: May be repeated. Maximum 6 hours.)

436 Modern American Novel (3) Authors such as Faulkner, Steinbeck, and Welty.

(Repeatable: May be repeated. Maximum 6 hours.)

437 American Romanticism (3) World War I to the present.

(Repeatable: May be repeated. Maximum 6 hours.)

438 American Realism and Naturalism (3) Literature from the time of the Civil War to World War I. Includes writers such as Alcott, Twain, Howells, James, Jewett, Harper, Crane, Norris, and Wharton.

(Repeatable: May be repeated. Maximum 6 hours.)

439 American Modernism (3) World War I to the present.

(Repeatable: May be repeated. Maximum 6 hours.)
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, and basic features of American English grammar necessary for teaching ESL. (Same as Linguistics 474.)
(RE) Prerequisite(s): 102 or 118.
Recommended Background: Second year of a foreign language.

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.)
(RE) Prerequisite(s): 102 or 118.

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.)
(RE) Prerequisite(s): 102 or 118.

479 Literary Criticism (3) Historical survey of major works of literary criticism.
(RE) Prerequisite(s): 102 or 118.

(RE) Prerequisite(s): 102 or 118.

481 Studies in Folklore (3) Topic varies.
Repeatability: May be repeated if topic differs. Maximum 6 hours.
(RE) Prerequisite(s): 102 or 118.

482 Major Authors (3) 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). Content varies.
Repeatability: May be repeated. Maximum 6 hours.
(RE) Prerequisite(s): 102 or 118.

483 Special Topics in Literature (3) Topic varies.
Repeatability: May be repeated. Maximum 6 hours.
(RE) Prerequisite(s): 102 or 118.

484 Special Topics in Writing (3) Original writing integrated with reading. Usually taught by a professional author.
Repeatability: May be repeated. Maximum 6 hours.
(RE) Prerequisite(s): 102 or 118.

485 Special Topics in Language (3) (Same as Linguistics 485.)
Repeatability: May be repeated with consent of department. Maximum 6 hours.
(RE) Prerequisite(s): 102 or 118.

486 Special Topics in Criticism (3) Special topics in theoretical and practical approaches to British and American literature. Content varies.
Repeatability: May be repeated with consent of department. Maximum 6 hours.
(RE) Prerequisite(s): 102 or 118.

489 Special Topics in Film (3) Particular directors, film genres, national cinema movements, or other topics. Content varies. (Same as Cinema Studies 489.)
Repeatability: May be repeated with consent of department. Maximum 6 hours.
(RE) Prerequisite(s): 102 or 118.

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. (Same as Linguistics 490.)
(RE) Prerequisite(s): 102 or 118.

491 Foreign Study: Drama in Stratford and London (1-4) Seeing, studying, and writing about drama as performed in London and Stratford-upon-Avon during the summer.
Repeatability: May be repeated once with instructor's permission.
(RE) Prerequisite(s): 102 or 118.

492 Off-Campus Study: Drama in New York (3) Seeing, studying, and writing about drama as performed in New York City.
(RE) Prerequisite(s): 102 or 118.

493 Independent Study (1-6) Tutorial in subjects not adequately covered in regular courses.
Repeatability: May be repeated. Maximum 6 hours.
(RE) Prerequisite(s): 102 or 118.

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.
(RE) Prerequisite(s): 355.

496 The Rhetoric of Legal Discourse (3) Nature of legal language and written discourse types (opinions, memoranda, briefs). Introduction to legal research resources and techniques. Issue identification and argumentative techniques. Students will write position papers, memoranda, and briefs. No prior legal knowledge necessary.
Recommended Background: 355 or consent of instructor.

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.
(RE) Prerequisite(s): 398.

499 Senior Seminar (3) Intensive study of 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. Capstone experience. Writing-emphasis course. (WC)
(RE) Prerequisite(s): 102 or 118.
Comment(s): Completion of 15 upper-division hours in English required.
Registration Restriction(s): English major.

English Education (340)

459 Teaching English in the Secondary School (3) Techniques of teaching composition, language, and literature.
Registration Restriction(s): Qualification – admission to teacher education.

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 helps 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, and disease development and principles of control.
Contact Hour Distribution: 2 hours and 1 lab.

321 Economic Entomology (3) Structure, life history, habits, and principles of control of important insect pests of farm, garden, orchard, and household.
Contact Hour Distribution: 2 hours and 1 lab.

325 Veterinary Entomology (3) Identification, biology, and control of arthropods that attack major livestock species. Introduction to entomology methods of insect control, major pest species groups, and problems associated with specific host production operations.
Contact Hour Distribution: 2 hours and 1 lab.

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 material and cultural techniques in laboratories.
Contact Hour Distribution: 2 hours lecture and one 2-hour lab.
Credit Restriction: Students cannot receive credit for both 405 and 505.
Recommended Background: Biology 130 and Ecology and Evolutionary Biology 110.

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.

411 Forest Insects and Diseases (3) Insects and pathogens associated with trees and shrubs will be identified and their impacts on host plants evaluated.

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.
Credit Restriction: 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. (Same as Plant Sciences 451.)
Contact Hour Distribution: Lecture and lab.
Registration Permission: Consent of instructor.
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. (OC)

210 Introduction to Soil Science (4) Differences in soils; soil genesis; and the 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. Contact Hour Distribution: 3 hours lecture and one 2-hour lab.

220 Waters and Civilizations (3) Investigation and discussion of the societal impacts on ancient and modern civilizations of water issues, including irrigation, flood control, droughts and desertification, dam construction, aquifers, drinking water, water pollution, and water rights. Contact Hour Distribution: 3 hours lecture.

242 Soil Morphology (1) Intensive course involving describing, classifying and interpreting soils in preparation for regional and national soil judging contests. Contact Hour Distribution: 1 hour and 1 lab. Repeatability: May be repeated. Maximum 4 hours. Registration Permission: Consent of instructor.

301 Professional Development (1) Techniques of effective professional communications, professional ethics, interviewing, and the job search. Grading Restriction: Satisfactory/No Credit grading only. Registration Restriction(s): Minimum student level – junior.

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. Contact Hour Distribution: 2 hours lecture and one 2-hour lab. (RE) Prerequisite(s): 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. Contact Hour Distribution: 2 hours and 1 lab. (RE) Prerequisite(s): 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. (RE) Prerequisite(s): 210 and 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. (RE) Prerequisite(s): Chemistry 110 or Chemistry 350.

442 Soil Genesis and Classification (3) Soil genesis and formation; observing and describing morphology of agricultural and forest soils; chemical and physical properties; and classification. Includes 3 weekend field trips. Contact Hour Distribution: 2 hours and 1 lab. (RE) Prerequisite(s): 210.

444 Environmental Soil Physics (3) Basic understanding of soil physical properties and processes; influence of soil physical properties on water and chemical movement in soil; and practical experience in the measurement and analysis of soil physical properties, water flow, and chemical movement in soil. Credit Restriction: Students cannot receive credit for both 444 and 544. (RE) Prerequisite(s): 210 and Physics 221.


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. Grading Restriction: Satisfactory/No Credit grading only. Repeatability: May be repeated. Maximum 6 hours. Registration Permission: Consent of instructor.

493 Problems in Environmental and Soil Sciences (1-3) Special research problems in environmental sciences. Repeatability: May be repeated. Maximum 6 hours. Registration Permission: Consent of instructor.

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. Grading Restriction: Satisfactory/No Credit grading only. (RE) Prerequisite(s): 100.

325 Athletic Training Techniques (3) Prevention of athletic injuries through sound conditioning programs and practices. Recognition and immediate treatment of injuries. (RE) Prerequisite(s): 332. Registration Restriction(s): Exercise science major.


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.

370 Aging and Physical Activity (3) Examines the biological, social, and behavioral aspects of exercise and physical activity in older adults in order to develop programs for older adults to improve and/or maintain functional status. Methods of measuring physical activity and assessing functional status for older adults are also considered and practiced. The course provides a foundation for working with older adults in programs and sites for exercise and/or physical activity.

380 Special Topics (1-3) Study in selected disciplinary or professional areas of exercise science. Repeatability: May be repeated. Maximum 6 hours.

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. Contact Hour Distribution: 2 lectures and 1 lab. (RE) Prerequisite(s): Biochemistry and Cellular and Molecular Biology 230. Registration Restriction(s): 2.50 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. (RE) Prerequisite(s): 332 and Physics 221. Registration Restriction(s): 2.50 GPA.

426 Exercise Science Practicum II (1-6) Supervised experience in exercise/fitness areas. Grading Restriction: Satisfactory/No Credit grading only. Repeatability: May be repeated. Maximum 10 hours. Registration Restriction(s): Exercise Science major; 2.50 GPA.

440 Strength and Conditioning Programs (3) Covers scientific and practical foundations of strength and conditioning programs and program design applied to healthy adults, athletes, youth, and older adults. Provides hands-on experiences with young adults and requires the development of educational materials. This course is designed to prepare students for nationally recognized strength and conditioning certification exams. (RE) Prerequisite(s): 332 and Biochemistry and Cellular and Molecular Biology 230. (DE) Prerequisite(s): Physical Education 252. Registration Restriction(s): Exercise science major; 2.50 GPA.

480 Physiology of Exercise (3) Lecture and laboratory class dealing with functions of the body in muscular work. Topics include physiological aspects of fatigue, training, and adaptation to environment. (Same as Biochemistry and Cellular and Molecular Biology 480.) Contact Hour Distribution: 2 lectures and 1 lab. (RE) Prerequisite(s): Biochemistry and Cellular and Molecular Biology 230 or Biochemistry and Cellular and Molecular Biology 440. Registration Restriction(s): 2.50 GPA.
490 Exercise Physiology/Fitness Internship (12-15) Full-time practicum in exercise/fitness at approved agency. Grading Restriction: Satisfactory/No Credit grading only. Repeatability: May be repeated for credit. May be taken once for 12-15 hours. (RE) Prerequisite(s): 414 and 422. (DE) Prerequisite(s): 426 and 480. Registration Restriction(s): Exercise science major; 2.50 GPA. Registration Permission: Consent of instructor.

493 Directed Independent Studies (1-3) Independent study in a specialized area with exercise science. Repeatability: May be repeated. Maximum 9 hours. Registration Restriction(s): Exercise science major; 2.50 GPA. Registration Permission: Consent of instructor.

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. Repeatability: Not repeatable for credit. May be taken once for 3-6 hours. Registration Restriction(s): Exercise science major; minimum student level — senior.

Finance (349)

301 Financial Management (3) Principles of financial management. Investment, financing, and asset management functions of the firm. (RE) Prerequisite(s): Business Administration 201.

307 Honors: Financial Management (3) Principles of financial management. Investment, financing and asset management functions of the firm. (RE) Prerequisite(s): Business Administration 207. Comment(s): Admission to the College of Business Administration's Global Leadership Scholars Program is required.

402 Special Topics in Finance (3) Junior- and senior-level finance seminar. Repeatability: May be repeated if topic differs. Maximum 6 hours. (RE) Prerequisite(s): 301 and Accounting 301. Registration Restriction(s): Majors in the College of Business Administration. Comment(s): Admission to the College of Business Administration's Global Leadership Scholars Program is required.

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. (RE) Prerequisite(s): 301 and Accounting 301. Comment(s): Grade of C or better in Finance 301 is required. Registration Restriction(s): Majors in the College of Business Administration.

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. (RE) Prerequisite(s): 301 and Accounting 301. Comment(s): Grade of C or better in Finance 301 is required. Registration Restriction(s): Majors in the College of Business Administration.

455 Financial Management: Theory and Practice (3) Decision-making topics in financial management, including valuation, capital budgeting under uncertainty, cost of capital, capital structure theory, and dividend policy. Major writing requirement. (RE) Prerequisite(s): 414 and 422. Registration Restriction(s): Majors in the College of Business Administration.

475 Insurance and Financial Planning Management (3) Course will cover the basic principles of risk management; insurance; and financial, estate, and retirement planning. (RE) Prerequisite(s): 301 and Accounting 301. Comment(s): Grade of C or better in Finance 301 is required. Registration Restriction(s): Majors in the College of Business Administration.

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. (RE) Prerequisite(s): 301 and Accounting 301. Comment(s): Grade of C or better in Finance 301 is required.

492 Off-Campus Study (1-3) Professional internship with practicing professionals under the direction of a faculty member. Grading Restriction: Satisfactory/No Credit grading only. Repeatability: May be repeated. Maximum 3 hours. Credit Restriction: Free elective credit only. Registration Restriction(s): Finance major. Registration Permission: Consent of instructor.

493 Independent Study (1-3) Grading Restriction: Letter grade only. Repeatability: May be repeated. Maximum 3 hours. Registration Restriction(s): Finance major. Registration Permission: Consent of instructor.

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. Repeatability: May be repeated. Maximum 3 hours. Comment(s): 3.00 in all upper-division business courses is required. Grade of C or better in Finance 301 is required. Registration Permission: Consent of instructor.

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. Grading Restriction: A, B, C, No Credit grading. Credit Restriction: Students may not receive credit for both First Year Studies 101 and Business Administration 100.

129 Freshman Seminar (1) Small, academic seminars that encourage the exchange of ideas between professors and students. For a current list of course topics consult http://www.utk.edu/freshmanseminar/. Grading Restriction: Satisfactory/No Credit grading only. Repeatability: May be repeated. Maximum 2 hours. Registration Restriction(s): Freshman only.

401 Peer Mentor Techniques (1) Training of upper-class 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, and mentoring and advising skills. Registration Permission: Consent of instructor.

402 Peer Mentor Practicum (1) Peer mentoring of first year studies students. Grading Restriction: Satisfactory/No Credit grading only. Repeatability: May be repeated. Maximum 3 hours. (RE) Prerequisite(s): 401. Registration Permission: Consent of instructor.

Food Science and Technology (390)

101 Science of Foods (3) (See Hotel, Restaurant, and Tourism 101.)

150 History and Culture of Food (3) Impact of people and historical events on the production, distribution, and consumption patterns of food. The role of food as an indicator of cultural, societal, and historical changes around the world. Major technological advances in food processing and their impact on the globalization of the food supply. Contact Hour Distribution: 3 hours lecture.

240 Field Observations in Food Processing (3) Introduction to, observation of, and familiarization with processing, packaging, quality control, and distribution of different types of foods. Application of purchase specifications. Contact Hour Distribution: 1 hour discussion and one 4-hour lab. Registration Restriction(s): Food science and technology major.


400 Professional Food Science Communication (1) Individual reports and group discussion on current topics. Repeatability: May be repeated. Maximum 3 hours. Registration Restriction(s): Minimum student level – junior.
410 Food Chemistry (3) Reactions of water, proteins, lipids, carbohydrates, minerals, enzymes, vitamins, and additives in foods. 
Contact Hour Distribution: 3 hours lecture. 
(RE) Prerequisite(s): Chemistry 110 or Chemistry 350.

415 Food Analysis (4) Principles, methods, and techniques for qualitative and quantitative analyses of composition and physical, chemical, and biological properties of food and food ingredients. 
Contact Hour Distribution: 3 hours and one 2-hour lab. 
(RE) Prerequisite(s): Chemistry 110 or 350.

419 Food Chemistry Lab (1) Interaction of water, proteins, lipids, carbohydrates, minerals, enzymes, vitamins, and additives in foods and methods of evaluation of chemical properties of foods. 
Contact Hour Distribution: One 2-hour lab. 
(RE) Corequisite(s): 410.

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. 
(RE) Prerequisite(s): Microbiology 210 or Microbiology 310.

429 Food Microbiology Lab (3) Methods for examination, enumeration, cultivation, and identification of foodborne microorganisms. 
(RE) Corequisite(s): 420.

430 Sensory Evaluation of Food (3) Principles and methods of sensory evaluation of foods. 
Contact Hour Distribution: 2 hours and 1 lab. 
Recommended Background: A statistics course.

441 Food Engineering (3) Units and dimensions, physical properties, transport processes, fluid flow, heat transfer, thermal and nonthermal preservation processes, refrigeration, freezing, evaporation, psychrometrics, mass transfer, membrane separations, and dehydration. 
Credit Restriction: Students cannot receive credit for both 441 and 541. 
(RE) Prerequisite(s): Physics 101 or Physics 221.

442 Special Topics In Food Science and Technology (1-3) Topics of current concern to the food industry. 
Repeatability: 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. 
Contact Hour Distribution: 3 hours lecture and 1 lab. 
(RE) Prerequisite(s): 410 and 340.

461 Fresh Meats (3) Basic principles in the conversion of muscle to meat and the factors that contribute to the utilization and marketing of quality fresh meat products.

462 Manufactured Meat Technology (2) Basic principles of manufacturing value-added meat products. 
Contact Hour Distribution: 1 hour lecture and 1 hour lab.

460 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. 
Comment(s): Core courses in food science and technology will serve as an essential basis for understanding of material covered in this course. 
Registration Restriction(s): Minimum student level – senior.

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. 
Repeatability: 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. 
Registration Restriction(s): Minimum student level – senior.

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Foreign Language/ESL Education (394)

Recommended Background: Completion or near completion of foreign language hours for certification. 
Registration Restriction(s): Qualification – admission to teacher education.

466 ESL Assessment and Evaluation (3) Highlights the implementation of authentic assessment, specifically, portfolio assessment for ESL students in K-12 settings. Focuses on designing appropriate tools for various assessment purposes. Specific types and different forms of assessment are examined based on their effectiveness and meaningfulness. Required for Tennessee (PreK-12) licensure. 
Comment(s): Requires admission to teacher education or consent of instructor.

476 Teaching English as a Second Language (3) Examines ESL pedagogy, practices, research, and instructional strategies that accommodate students at all levels of ESL/EFL settings. Required for Tennessee (PreK-12) licensure. 
Comment(s): Requires admission to teacher education or consent of instructor.

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 North America.

214 Tree Biology (3) An introduction to the anatomy and development of woody plants, their reproduction, growth requirements, and functioning. 
(RE) Prerequisite(s): Biology 111 or 101.

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; and site quality. Perturbations and growth, survival and forest composition; forest succession; and fire ecology. Regeneration ecology through establishment and stand dynamics. 
Physiological ecology, ecological strategies, and adaptations of trees. 
Contact Hour Distribution: 2 hours and 1 lab. 
(RE) Prerequisite(s): Forestry; Wildlife and Fisheries 212.

305 Prescribed Fire Management (2) Prescribed fire ecology, use, and management in forest stands. 
Grading Restriction: Satisfactory/No Credit grading only. 
(RE) Prerequisite(s): Forestry; Wildlife and Fisheries 312.

306 Forest Protection (3) Biological and economic considerations of native and exotic pathogens, insects, and vertebrates; and damage from weather in the forest ecosystem. One or more all day or overnight field trips may be required. 
Contact Hour Distribution: 2 hours and 1 lab. 
(RE) Prerequisite(s): Forestry; Wildlife and Fisheries 212.

314 Economics of Forest and Wildland Resources (2) Basic principles of forest resource economics. Microeconomic applications in forestry and non-market valuation and analysis. Financial analyses of private and public forest resource management decisions. 
(RE) Prerequisite(s): Economics 201.

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. (WC)

322 Silvicultural Practices (3) Application of silvicultural techniques and tree improvement. Use of herbicides and fire management. 
(RE) Prerequisite(s): Forestry; Wildlife and Fisheries 312. 
(RE) Corequisite(s): 305 and 323.

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 are required. 
Grading Restriction: Letter grade only. 
(RE) Prerequisite(s): 305 and 322.

326 Land Measurement Techniques (2) Surveying techniques and road layout and construction as applied to forestry. Timber harvest techniques. 
(RE) Prerequisite(s): Forestry; Wildlife and Fisheries 313. 
(RE) Corequisite(s): 305 and 323.

329 Forest Resource Inventory (3) Tree, log, and lumber scaling and grading. Land inventory and stand mapping. Volume estimation. 
(RE) Prerequisite(s): Forestry; Wildlife and Fisheries 313. 
(RE) Corequisite(s): 305 and 323.
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. (RE) Prerequisite(s): Biology 112. (RE) Corequisite(s): 332.

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. (RE) Prerequisite(s): Forestry, Wildlife and Fisheries 212. (RE) Corequisite(s): 331.

414 Tree Physiology (3) Tree structure, growth, development, 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. Credit Restriction: Students cannot receive credit for both 414 and 514. (RE) Prerequisite(s): Biology 112 or Biology 102.

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. Repeatability: May be repeated. Maximum 3 hours. Credit Restriction: May not be taken by forestry or wildlife and fisheries majors. Registration Permission: Consent of instructor.

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; and goal programming. Credit Restriction: Students cannot earn credit for both 420 and 520. Registration Restriction(s): Minimum student level - senior.


423 Wildland Recreation Planning and Management (3) Planning processes, master and site planning, and site design projects. Management strategies and methods of visitor and recreation site management. Case studies. Weekend field trips may be required. Contact Hour Distribution: 2 hours and 1 lab.

492 Practicum in Forestry (1-6) Supervised experience at departmental-approved employment location. Grading Restriction: Satisfactory/No Credit grading only. Repeatability: May be repeated. Maximum 6 hours. Registration Restriction(s): Minimum student level – junior.

493 Independent Study in Forestry (1-15) Special research or individual problem in forestry. Repeatability: May be repeated. Maximum 15 hours. Registration Permission: Consent of instructor.

495 Internship in Wildland Recreation (1-6) A highly-structured field experience guided by specific learning objectives. Students earn one credit per two weeks of full-time field experience. The student is responsible for field placement. Must be pre-approved by the instructor and the field supervisor. Repeatability: May be repeated. Maximum 6 hours. Registration Restriction(s): Minimum student level – junior.

496 Internship in Forestry (1-6) Supervised experience at departmental-approved employment location arranged by the student. Students earn one credit per two weeks of full-time field experience. Internship learning objectives must be pre-approved by the advisor/instructor and the field supervisor. Daily log, supervisor evaluations, and final report required. Repeatability: May be repeated. Maximum 6 hours. Registration Restriction(s): Minimum student level – junior.

Forestry, Wildlife and Fisheries (398)

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. Day field trips may be required. Contact Hour Distribution: 2 hours and 1 lab. (RE) Prerequisite(s): Biology 102 or Biology 112.

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. (WC) Contact Hour Distribution: 2 hours and 1 lab. (RE) Prerequisite(s): Chemistry 100.


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. (RE) Prerequisite(s): Chemistry 100 or 120.

412 Human Dimensions of Natural Resources (3) Natural resource management as a social process focusing on human, social and organizational factors. Managing the self, multiple relationships, and conflicting public wants. Influences of human values, attitudes and behaviors, and place, and those of organizational and professional cultures. Stakeholder and collaborative approaches to natural resource management, partnerships, public involvement, and conflict management. Contact Hour Distribution: 2 hours and 1 lab. (RE) Prerequisite(s): 317. Registration Restriction(s): Minimum student level - senior.

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. Contact Hour Distribution: 1 hour and 2 labs. Registration Restriction(s): Minimum student level – senior.

420 International Natural Resource Issues (3) 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. Credit Restriction: Students cannot earn credit for both 420 and 520.

French (405)

111 Elementary French I (3) Introduction to French. Credit Restriction: Not available to students eligible for 150.

112 Elementary French II (3) Introduction to French. Credit Restriction: Not available to students eligible for 150. (RE) Prerequisite(s): 111.

150 Intermediate French Transition (3) This course is designed to prepare students for enrollment in 211. Credit Restriction(s): For elective credit only. 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 6 hours of elementary language credit awarded through placement examination.

211 Intermediate French I (3) (CC) (DE) Prerequisite(s): 150 or 112 or departmental placement exam. Comment(s): Students who place in 200-level courses from high school will receive 6 hours of elementary French credit.

212 Intermediate French II (3) (CC) (RE) Prerequisite(s): 211. Comment(s): Students who place in 200-level courses from high school will receive 6 hours of elementary French credit.

217 Honors: Intermediate French I (3) For students of superior ability in French. Students follow enriched program with emphasis on speaking ability and reading, including literary selections. (CC) Credit Restriction: Incoming freshmen admitted on basis of diagnostic test, high school average, and performance on ACT.

218 Honors: Intermediate French II (3) For students of superior ability in French. Students follow enriched program with emphasis on speaking ability and reading, including literary selections. (CC) Credit Restriction: Students receiving a grade of A or B in 217 may enter 218 with permission of instructor. Credit for 300 is given to students receiving a grade of A or B in 218.

300 Transitional Grammar Review and Reading (3) For students who have completed the intermediate-level sequence and who need additional preparation in reading comprehension, vocabulary acquisition, and key areas of grammar. Credit Restriction: May not be applied toward the major or minor. (RE) Prerequisite(s): 212 or 218.
301 Elements of French for Upper-Division and Graduate Students (3) Elements of language, elementary and advanced readings. Grading Restriction: No auditors. Credit Restriction: No credit for students who have completed 111 and 112 or equivalent. Comment(s): Open to graduate students (for undergraduate credit) preparing for language examinations and upper-division students desiring reading knowledge of the language.

302 Elements of French for Upper-Division and Graduate Students (3) Elements of language, elementary and advanced readings. Grading Restriction: No auditors. Credit Restriction: No credit for students who have completed 111-112 or equivalent. Comment(s): Open to graduate students (for undergraduate credit) preparing for language examinations and upper-division students desiring reading knowledge of the language.

333 Intermediate Composition and Grammar (3) Emphasizes writing skills. Review of major grammatical points in French. (RE) Prerequisite(s): 212 or 218.


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. Credit Restriction: Either 334 or 345 may be applied toward the major, but not both. (RE) Prerequisite(s): 333.

351 History of French Literature I (3) Chronological overview of French literature and culture from the Middle Ages to 1800. (RE) Prerequisite(s): 333.

352 History of French Literature II (3) Chronological overview of French literature and culture from 1800 to the present. (RE) Prerequisite(s): 333. Comment(s): May be taken before 351.

410 Medieval French Literature (3) Major representative works of Medieval French literature. Texts in modern French. Writing-emphasis course. (Same as Medieval Studies 410.) (RE) Prerequisite(s): 351 or 352.

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. Writing-emphasis course. (RE) Prerequisite(s): 351 or 352.

412 French Literature of the 17th Century (3) Masterpieces of 17th-century French literature. Writing-emphasis course. (RE) Prerequisite(s): 351 or 352.

413 French Literature of the 18th Century (3) Major works of the Enlightenment. Writing-emphasis course. (RE) Prerequisite(s): 351 or 352.

414 French Literature of the 19th Century (3) French Romanticism and its counter movements - Realism, Parnassianism, and Naturalism. Writing-emphasis course. (RE) Prerequisite(s): 351 or 352.

415 French Literature of the 20th Century (3) Evolution of 20th-century French literature. Writing-emphasis course. (RE) Prerequisite(s): 351 or 352.

420 French Cinema (3) The French cinema from its earliest days through the New Wave directors. May be applied toward the French major. Writing-emphasis course. (Same as Cinema Studies 420.) (RE) Prerequisite(s): 351 or 352.

421 Phonetics (3) Foundation in the science of phonetics. Practical exercises and individual performance. (RE) Prerequisite(s): 333.

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. (RE) Prerequisite(s): 333.

423 Advanced Conversation (1) Informal conversation with native speaker on contemporary topics. Stresses in-class contact rather than outside preparation. Contact Hour Distribution: Meets 2 hours a week. (RE) Prerequisite(s): 333.

424 Advanced Conversation (1) Informal conversation with native speaker on contemporary topics. Stresses in-class contact rather than outside preparation. Contact Hour Distribution: Meets 2 hours a week. (RE) Prerequisite(s): 333.

425 Introduction to Descriptive Linguistics (3) Initiation into the theory and practice of techniques of linguistic analysis in the subfields of phonetics, phonology, morphology, syntax, semantics, pragmatics, and historical linguistics. Discussion of their relevance to the learning and teaching of foreign languages and to the study of literary texts. Writing-emphasis course. (Same as German 425; Linguistics 425; Russian 425; Spanish 425.) Recommended Background: Linguistics 200.

426 Methods of Historical Linguistics (3) (See German 426.)

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. May be applied toward the major as a literature course. Writing-emphasis course. (RE) Prerequisite(s): 351 or 352.

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. (RE) Prerequisite(s): 351 or 352.

432 Contemporary French Culture (3) Current French cultural issues placed in historical perspective with a comparative emphasis. Writing-emphasis course. (RE) Prerequisite(s): 351 or 352.

433 French and Francophone Women Writers (3) Works by women writing in French considered in cultural context. In English with readings in French for majors. May be applied toward the French major. Writing-emphasis course. (Same as Women's Studies 433.)

435 Introductory French for the Sciences (3) For science majors. (RE) Prerequisite(s): 333.

440 Capstone Experience in French (3) Synthesizing senior colloquium and tutorial in which students reflect on the raison d'être of the discipline from a multidimensional point of view. Writing-emphasis course. Registration Restriction(s): Minimum student level – senior.

450 Special Topics (3) Selected topics in French studies. Repeatability: May be repeated if topic differs. Maximum 6 hours.

490 Internship (1-15) Career-related experiences in the United States or abroad. Grading Restriction: Satisfactory/No Credit grading only. Repeatability: May be repeated. Maximum 15 hours. Registration Restriction(s): French major/language and world business concentration.

491 Foreign Study (1-15) Repeatability: May be repeated. Maximum 15 hours. Registration Permission: Consent of program chair.

492 Off-Campus Study (1-15) Repeatability: May be repeated. Maximum 15 hours. Registration Restriction: Consent of program chair.

493 Independent Study (1-15) Repeatability: May be repeated. Maximum 15 hours. Registration Permission: Consent of program chair.

Geography (415)

101 World Geography (3) Selected topics and world regions, especially those of contemporary interest. Illustrates geographical points of view, concepts, and techniques. (SS) Comment(s): 101 and 102 do not have to be taken in sequence.

102 World Geography (3) Selected topics and world regions, especially those of contemporary interest. Illustrates geographical points of view, concepts, and techniques. (SS) Comment(s): 101 and 102 do not have to be taken in sequence.

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. Credit Restriction: Students may not receive credit for both 102 and 108. Comment(s): Open to students who have received an A in 101.
131 Geography of the Natural Environment I (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. Covers elements and controls of climate, atmospheric circulation, precipitation and storms, the hydrological cycle, world climate and vegetation patterns, and climate change. (NS)

- Contact Hour Distribution: 3 hours lecture and 2 hours lab.

132 Geography of the Natural Environment II (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. Covers earth materials, tectonic activity, geomorphic processes and landforms, soils, and human impacts on the landscape. (NS)

- Contact Hour Distribution: 3 hours lecture and 2 hours lab. (RE) Prerequisite(s): 131.

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.

- Repeatability: May be repeated. Maximum 6 hours.

309 Special Topics (1-3) Instructor-initiated course on selected research-related topics.

- Repeatability: May be repeated. Maximum 6 hours.

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.

- Contact Hour Distribution: 2 hours lecture and 2 hours lab.

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. (RE) Prerequisite(s): 131.


345 Population and Environment (3) Global and local patterns of population distribution and change as they relate to culture, economic development, technology, the environment, and the future. Writing-emphasis course.

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.)

374 Geography of East Asia (3) Physical, cultural and economic characteristics of East Asia. Writing-emphasis course. (Same as Asian Studies 374.)

410 Global Positioning Systems and Geographic Data (3) Theory, field, and laboratory use of Global Positioning Systems for capturing digital geographic data. Management of geographic data, including coordinate systems, datum issues, scanning digitizing, map standards, and uncertainty in Geographic Information Systems.

- Contact Hour Distribution: 2 hours lecture and 2 hours lab.
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. Erosional and depositional evidence, including fluvial, glacial, aeolian, and shoreline features of past climatic and biological regimes. (DE) Prerequisite(s): 132 or Geology 101 and 102 or Geology 107 and 108.

490 Internship (3) Career-related experience for geography majors with business, nonprofit, and government organizations. Grading Restriction: Satisfactory/No Credit grading only. Repeatability: May be repeated. Maximum 6 hours. Registration Permission: Consent of department.

491 Foreign Study (1-15) Repeatability: May be repeated. Maximum 15 hours. Registration Permission: Consent of department.

492 Off-Campus Study (1-15) Repeatability: May be repeated. Maximum 15 hours. Registration Permission: Consent of department.

493 Independent Study (1-15) Repeatability: May be repeated. Maximum 15 hours. Registration Permission: Consent of department.

494 Undergraduate Research Experience (1-3) Supervised participation in active research projects. Grading Restriction: Satisfactory/No Credit grading only. Repeatability: May be repeated. Maximum 6 hours. Registration Permission: Consent of department.

495 Special Topics in Geography (1-4) Topics vary. Repeatability: May be repeated with consent of instructor. Maximum 8 hours. Registration Permission: Consent of instructor.

497 Honors: Senior Thesis (3) Students develop undergraduate thesis topic under the guidance of a faculty advisor. Comment(s): Completion of 75 hours with 3.20 GPA required. Registration Permission: Consent of thesis advisor.


499 Proseminar in Geography (3) Major themes in geography, especially trends over the past 40 years. A required course for geography majors. Comment(s): To enroll, students must have completed 12 hours in geography. Registration Restriction(s): Minimum student level – senior.

Geology (424)

101 The Dynamic Earth (4) Physical processes within and upon the Earth’s surface, including the formation of rocks, plate tectonics and earthquakes, and landscapes. (NS)

102 Earth, Life, and Time (4) Fossils, evolution, and ancient environments, plus a review of 4.5 billion years of Earth history. (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. (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. (NS)

108 Honors: Earth, Life, and Time (4) Laboratory and field emphasis to understanding fossils, evolution, and ancient environments throughout 4 billion years of Earth history. (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. (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. (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. 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. (NS)

207 Honors: Age of the Dinosaurs (4) Students in this course will attend the lectures of Geology 205 and complete all assignments for that class. In addition, the students will participate in a field trip, hands-on exercises, and discussion sessions with the instructor. (NS)

301 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. Contact Hour Distribution: 3 hours lecture and one 2-hour lab. (RE) Prerequisite(s): Chemistry 120. (DE) Corequisite(s): Chemistry 130.

320 Paleobiology (4) Critical analysis of the preserved record of ancient life, with emphasis on recognition of evolutionary patterns, processes, and extinctions. Interpretation of ancient environments and the integrated use of fossils and other geological features in solving problems of geologic correlation and age dating. Statistical and qualitative approaches applied to field and laboratory data. Contact Hour Distribution: 3 hours lecture and one 2-hour lab. Recommended Background: Two 100-level geology courses.

330 Igneous and Metamorphic Petrology (4) Study of the properties of crustal 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. Contact Hour Distribution: 3 hours lecture and one 2-hour lab. (RE) Prerequisite(s): 310.

340 Earth Sedimentary Processes (4) Earth surface processes applied to interpretation of the stratigraphic record – weathering and soil formation, the hydrologic cycle, physical sediment transport, biological and chemical sedimentation, and sediment diagenesis. Contact Hour Distribution: 3 hours lecture and one 2-hour lab. Recommended Background: Two 100-level geology courses or consent of instructor.

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, and planetary exploration.

Contact Hour Distribution: 3 hours lecture and one 2-hour lab.
(Re) Prerequisite(s): 330 and 370.

401 Quantitative Methods in Geology (3) Applications of calculus and differential equations to problems in the earth sciences. Examples of the diffusion equation in hydrogeology, the wave equation in geophysics, and mechanical modeling and boundary conditions in structural geology and tectonics.

Contact Hour Distribution: 3 hours lecture.
(Re) Prerequisite(s): Mathematics 142.
Recommended Background: Two 100-level geology courses.


Contact Hour Distribution: 2 lectures and one 2-hour lab.
(Re) Prerequisite(s): 310.

425 Data Analysis for Geoscientists (3) An overview of sampling schemes, data analysis, and statistical methods as applicable to earth sciences.
Recommended Background: Introductory geology and introductory calculus.

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, practiced, and applied to the solution of geologic problems.

Recommended Background: At least 16 hours from 310, 320, 330, 340, 370.
Registration Permission: 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. (Same as Geography 450.)
Contact Hour Distribution: 2 hours lecture and one 2-hour lab.
Recommended Background: Two 100-level or 200-level geology courses or consent of instructor.

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.
Recommended Background: Two 100-level or 200-level geology courses 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.

Contact Hour Distribution: 3 hours lecture and one 2-hour tutorial.
(Re) Prerequisite(s): Chemistry 130 and Mathematics 142.
Recommended Background: 330.

470 Applied Geophysics (3) Basic principles of data collection, processing, and analysis for several common geophysical techniques will be presented through lectures, computer assignments (labs), and field work. Passive (earthquake and active (reflection and refraction) seismology, potential fields (gravity and magnetics), heat flow, electromagnetics (including ground penetrating radar), and electrical techniques will be covered.

Contact Hour Distribution: One 3-hour meeting per week consisting of lecture, computer lab, or field work. One optional day or weekend field trip will be scheduled.
(Re) Prerequisite(s): Mathematics 141 and Physics 135.
Recommended Background: 8 hours from 330, 340, or 370 or consent of instructor.

473 Principles of Near-Surface Geophysics (3) Basics of several standard near-surface geophysics techniques (for example, seismic reflection, seismic refract, surface wave and GPR, electrical resistivity, magnetics, and EM), using state-of-the-art field equipment to develop the skills necessary to process and interpret data. Includes a significant field component.
Recommended Background: Introductory calculus.

485 Principles of Hydrogeology (3) Physical principles of flow, flow equations, geologic controls, aquifer analysis, water well design/testing, and introduction to transport processes. (Same as Civil Engineering 485.)
Recommended Background: Introductory calculus, physics, and geology.

490 Special Problems in Geology (1-3) Student- or instructor-initiated course offered at the convenience of the department with focus on specialized topics in the geological sciences.
Repeatability: May be repeated. Maximum 12 hours.

491 Foreign Study (1-12) Repeatability: May be repeated. Maximum 12 hours.
Credit Restriction: Maximum of 3 hours may be applied to the geology major.
Registration Permission: Consent of instructor.

492 Off-Campus Study (1-12) Repeatability: May be repeated. Maximum 12 hours.
Credit Restriction: Maximum of 3 hours may be applied to the geology major.
Registration Permission: Consent of instructor.

493 Independent Study (1-12) Student- or instructor-initiated independent study.
Repeatability: May be repeated. Maximum 12 hours.
Credit Restriction: Maximum of 3 hours may be applied to the geology major.
Registration Permission: Consent of instructor.

497 Honors: Senior Thesis (3) Student- or instructor-initiated independent study resulting in completion of an approved senior thesis.
Credit Restriction: Applies only to honors geology concentration or Chancellor’s Honors.
Registration Permission: Consent of instructor.

German (433)

101 Elementary German I (3) Introduction to German.
Credit Restriction: Not available to students eligible for 150.
Comment(s): If at least two years of German were taken in high school, a placement exam is required.

102 Elementary German II (3) Introduction to German.
Credit Restriction: Not available to students eligible for 150.
(Re) Prerequisite(s): 101.

150 Elementary German Transition (3) This course is designed to prepare students for enrollment in German 201.
Credit Restriction: 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 6 hours of elementary language credit awarded through placement examination.
Comment(s): If at least two years of German were taken in high school, a placement exam is required.

201 Intermediate German I (3) (CC)
(De) Prerequisite(s): 102 or 150 or placement exam.

202 Intermediate German II (3) (CC)
(De) Prerequisite(s): 201.

215 German Special Topics (3) Repeatability: May be repeated if topic differs. Maximum 6 hours.

301 Introduction to German Literature (3)
Recommended Background: 202 or placement exam.

302 Introduction to German Literature (3)
Recommended Background: 202 or placement exam.

305 Readings in German (3) Topics in both literary and nonliterary fields. Students or student groups are encouraged to suggest topics for future courses.
Repeatability: May be repeated. Maximum 6 hours.
Recommended Background: 202 or placement exam.

311 Conversation and Composition (3)
Recommended Background: 202 or placement exam.

312 Conversation and Composition (3)
Recommended Background: 202 or placement exam.

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 Elements of German for Upper-Division and Graduate Students (3) Elements of language, elementary and advanced readings and a final 10,000 word translation project.
Grading Restriction: A, B, C, No Credit grading.
Credit Restriction: No credit for students who have completed 101-102.
Comment(s): Open to graduate students for undergraduate credit preparing for language examinations and upper-division students desiring reading knowledge of the language.
332 Elements of German for Upper-Division and Graduate Students
(3) Elements of language, elementary and advanced readings and a final
10,000 word translation project.
Grading Restriction: A, B, C, No Credit grading.
Credit Restriction: No credit for students who have completed 101-102.
Repeatability: May be repeated. Maximum 6 hours.
(RE) Prerequisite(s): 331 or 301.
(DE) Prerequisite(s): 302 or 311 or 312.
Comment(s): Open to graduate students (for undergraduate credit) preparing for
language examinations and upper-division students desiring reading knowl-
edge of the language.

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. Writing-emphasis course. (Same as
Judaic Studies 350.)
Repeatability: May be repeated with approval of department. Maximum 6 hours.

363 Modern German Culture (3) German culture from the mid-19th cen-
tury to the present – customs, art, music, literature, society, and state.
Readings in English for non-majors and in German for majors. Fulfills
upper-level distribution requirement for foreign studies for those who
have not satisfied the history requirement with Western Civilization.
Writing-emphasis course.
Credit Restriction(s): Major credit, but no foreign language credit.

411 Advanced Conversation and Composition (3)
(RE) Prerequisite(s): 311 and 312.

412 Advanced Conversation and Composition (3)
(RE) Prerequisite(s): 311 and 312.

415 German Special Topics (3)
Repeatability: May be repeated if topic differs. Maximum 6 hours.
(RE) Prerequisite(s): 202.

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.
(RE) Corequisite(s): 101 and 102.

419 German Fairy Tales and Literary Fantasies (3) Examination of
how and why forms of literary fantasies ranging from apocalyptic dreams
to enchanted visions have changed over the centuries. Strong interdisci-
plinary component tracing interconnections between philosophy, psy-
chology, religion and literary history, as well as exploring the relationship
between literary, musical and artistic representations of specific themes.
(RE) Prerequisite(s): 301 and 302.

420 Selected Topics in German Literature from 1750 to the Present (3)
(RE) Prerequisite(s): 301 and 302.

425 Introduction to Descriptive Linguistics (3) (See French 425.)

426 Methods of Historical Linguistics (3) Phonetics, distinctive feature
analysis, sound change types, nature of sound change, principles of
reconstruction, and fundamental assumptions about language change
through time. Non-phonological linguistic change, language families, and
Proto-Indo-European and other proto-languages. (Same as French 426:
Linguistics 426; Russian 426; Spanish 426.)
(RE) Prerequisite(s): 311 and 312.
(DE) Prerequisite(s): 301 or 302.

431 Images of Nature and the Body in German Culture (3)
Representations of nature from idyllic refuge and object of praise to sci-
entific object and precarious resource. Other themes include sexuality,
the body, childhood, and aging. Discussions based on literary and docu-
mentary texts and films.
(RE) Prerequisite(s): 301 and 302.

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.
(RE) Prerequisite(s): 301 and 302.

433 Nation, Race, and Ethnicity (3) Examination of cultural construc-
tions of nation, race, and ethnicity and how they have challenged each
other and developed in German-speaking countries since the 18th cen-
tury. Close study and analysis of fiction, non-fiction, and films that
address controversial topics such as assimilation, integration, racial/eth-
nic identity formation, and multiculturalism.
(RE) Prerequisite(s): 301 and 302.

434 Extraordinary WoMen-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.
(RE) Prerequisite(s): 301 and 302.

435 Structure of the German Language (3) Contrastive English-
German segmental and suprasegmental phonemes, contrastive English-
German linguistic structures, selected topics in advanced German gram-
mar and syntactic analysis. (Same as Linguistics 435.)
(RE) Prerequisite(s): 311 and 312.
(DE) Prerequisite(s): 301 and 302.

436 History of the German Language (3) Development of the German
language from Indo-European through Proto-Germanic, Old High
German, and Middle High German to New High German. Internal and
external linguistic history of German speech. (Same as Linguistics 436.)
(RE) Prerequisite(s): 311 and 312.
(DE) Prerequisite(s): 301 and 302.

477 German Honors (1) Preparation of a proposal and an outline for an
honors paper.
Registration Permission: Consent of program chair.

478 German Honors (1) Preparation of a proposal and an outline for an
honors portfolio.
Registration Permission: Consent of program chair.

485 Business German (3) German used in fields of business, govern-
ment, administration, and economics.
(RE) Prerequisite(s): 311 and 312.

490 Internship (1-15) Career-related experiences in the United States or
abroad.
Grading Restriction: Satisfactory/No Credit grading only.
Registration Restriction(s): German major/language and world business concen-
tration.

491 Foreign Study (1-15)
Repeatability: May be repeated. Maximum 15 hours.
Registration Permission: Consent of program chair.

492 Off-Campus Study (1-15)
Repeatability: May be repeated. Maximum 15 hours.
Registration Permission: Consent of program chair.

493 Independent Study (1-15)
Repeatability: May be repeated. Maximum 15 hours.
Registration Permission: Consent of instructor.

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 institu-
tions that promote awareness of German culture among the general public.
Repeatability: May be repeated. Maximum 3 hours. (Maximum 1 hour per
semester.)
(DE) Prerequisite(s): 411 or 485.
Registration Permission: Consent of program chair.

497 Senior Honors (1-6) Preparation of an honors paper or an honors
portfolio, and oral presentation of the senior honors project to the
German faculty.
Repeatability: May be repeated. Maximum 6 hours.
Registration Permission: Consent of program chair.

Global Studies (440)

250 Introduction to Global Studies (3) (See Sociology 250.) (CC)

393 Global Justice and Human Rights (3) (See Philosophy 393.)

482 Special Topics in Global Literature (3) (See Modern Foreign
Languages and Literatures 482.)

491 Foreign Study (1-15)
Repeatability: May be repeated. Maximum 15 hours.
Comment(s): Requires advance approval of hours and topic by program chair.

492 Off-Campus Study (1-15)
Repeatability: May be repeated. Maximum 15 hours.
Comment(s): Requires advance approval of hours and topic by program chair.

493 Independent Study (1-15)
Repeatability: May be repeated. Maximum 15 hours.
Comment(s): Requires advance approval of hours and topic by program chair.
Haslam Scholars Program (446)

195 Summer Leadership Program (1) An intensive study of leadership in society.
Grading Restriction: Satisfactory/No Credit grading only.
Comment(s): Required of and limited to first-year Haslam Scholars.

197 Research for Nationally Competitive Scholarships (1) Review of and preparation for nationally competitive scholarship competitions.
Grading Restriction: Satisfactory/No Credit grading only.
Comment(s): Required of and limited to first-year Haslam Scholars.

258 Foundations of Modernity (3) This interdisciplinary seminar examines the significant ideas that have shaped western civilization from their ancient roots through their medieval development into modernity. (AH)
Grading Restriction: Letter grade only.
Comment(s): Required of and limited to first-year Haslam Scholars.

268 Perspectives on Globalization (3) This interdisciplinary seminar examines the significance of the globalization of ideas and economies. (SS)
Grading Restriction: Letter grade only.
Comment(s): Required of and limited to second-year Haslam Scholars.

288 Energy in the Modern World (3) This interdisciplinary seminar examines the problems and possibilities in applying and using energy in the modern world. (NS)
Grading Restriction: Letter grade only.
Comment(s): Required of and limited to second-year Haslam Scholars.

348 Service Learning Project/Internship (3) Students will complete a service-learning project or internship. Topics vary.
Grading Restriction: Letter grade only.
Comment(s): Required of and limited to third-year Haslam Scholars.

491 Study Abroad Program (3) Interdisciplinary study abroad. Topics vary.
Grading Restriction: Letter grade only.
Comment(s): Required of and limited to second-year Haslam Scholars.

497 Honors Thesis I (3) Substantial scholarly, scientific, or artistic endeavor or representing the capstone of a student's undergraduate education.
Grading Restriction: Letter grade only.
Comment(s): Required of and limited to Haslam Scholars.

498 Honors Thesis II (3) Substantial scholarly, scientific, or artistic endeavor or representing the capstone of a student's undergraduate education.
Grading Restriction: Letter grade only.
Comment(s): Required of and limited to Haslam Scholars.

499 Senior Colloquium (1) Thesis research presentation seminar.
Grading Restriction: Satisfactory/No Credit grading only.
Comment(s): Required of and limited to Haslam Scholars.

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.
Credit Restriction: Students who have received credit for 330 may not 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.
Grading Restriction: 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.
Grading Restriction: Satisfactory/No Credit grading only.


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 curriculum, 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.
Credit Restriction: Students who have received credit for 330 may not receive credit for 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.
(RE) Prerequisite(s): 300 or 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.)

404 Alcoholism and Alcohol Education (3) Factors which make alcoholism a serious health and safety problem. Various types of instruction-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. (Same as Safety 406.)

420 Sex Education as it Relates to Human Sexuality (3) Science of human sexuality. Emphasis on the trends, issues, and 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.
(RE) Prerequisite(s): 300 or 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.
Repeatability: May be repeated. Maximum 12 hours.
Registration Restriction(s): Minimum student level – junior.

475 Directed Independent Studies (1-3) Individual identification and study of a health/wellness or health promotion problem/issue.
Repeatability: May be repeated. Maximum 12 hours.
Registration Permission: Consent of instructor.

483 Field Practice (12) Off-campus health internship or field practice in an educational or other agency with qualified professional. Usually taken in final semester.
Grading Restriction: Satisfactory/No Credit grading only.
Comment(s): Approval of internship is required.

Hebrew (458)

141 Elementary Modern Hebrew I (4) (See Asian Studies 141.)

142 Elementary Modern Hebrew II (4) (See Asian Studies 142.)

241 Intermediate Modern Hebrew I (4) (See Asian Studies 241.) (CC)

242 Intermediate Modern Hebrew II (4) (See Asian Studies 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.
Grading Restriction: 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.
Repeatability: May be repeated. Maximum 3 hours.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>221</td>
<td>History of the United States (3) Settlement to 1877. Writing-emphasis course.</td>
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<tr>
<td>222</td>
<td>History of the United States (3) 1877 to present. Writing-emphasis course.</td>
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<tr>
<td>227</td>
<td>Honors: History of the United States (3) Students will attend the appropriate 221 lectures and the designated honors discussion section.</td>
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<td>Registration Permission: Consent of department.</td>
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<tr>
<td>228</td>
<td>Honors: History of the United States (3) Students will attend the appropriate 222 lectures and the designated honors discussion section.</td>
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<td>Registration Permission: Consent of department.</td>
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<tr>
<td>241</td>
<td>Development of Western Civilization (3) Historical survey of the civilization of the western world – ancient world to 1715. Writing-emphasis course. (CC)</td>
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<tr>
<td>242</td>
<td>Development of Western Civilization (3) Historical survey of the civilization of the western world – 1715 to present. Writing-emphasis course. (CC)</td>
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<tr>
<td>247</td>
<td>Honors: Development of Western Civilization (3) Students will attend the appropriate 241 lectures and the designated honors discussion section. Writing-emphasis course. (CC)</td>
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<tr>
<td>248</td>
<td>Honors: Development of Western Civilization (3) Students will attend the appropriate 242 lectures and the designated honors discussion section. Writing-emphasis course. (CC)</td>
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<tr>
<td>255</td>
<td>Introduction to Latin American Studies (3) Societies of Latin America with special emphasis on dominant culture patterns, social changes, and impact of nationalism. Pre-colonial and colonial periods through independence era. Writing-emphasis course. (Same as Latin American Studies 251.) (CC)</td>
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<tr>
<td>256</td>
<td>Introduction to Latin American Studies (3) Societies of Latin America with special emphasis on dominant culture patterns, social changes, and impact of nationalism. Latter 19th century and the modern period. Writing-emphasis course. (Same as Latin American Studies 252.) (CC)</td>
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<tr>
<td>261</td>
<td>A History of World Civilization (3) Historical survey of world civilization – origins to 1500. Writing-emphasis course. (CC)</td>
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<tr>
<td>262</td>
<td>A History of World Civilization (3) Historical survey of world civilization – 1500 to present. Writing-emphasis course. (CC)</td>
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<tr>
<td>267</td>
<td>Honors: A History of World Civilization (3) Students will attend the appropriate 261 lectures and the designated honors discussion section. Writing-emphasis course. (CC)</td>
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<tr>
<td>268</td>
<td>Honors: A History of World Civilization (3) Students will attend the appropriate 262 lectures and the designated honors discussion section. Writing-emphasis course. (CC)</td>
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<tr>
<td>301</td>
<td>History of Early Greece (3) (See Classics 301.)</td>
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<tr>
<td>302</td>
<td>History of Classical Greece (3) (See Classics 302.)</td>
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<tr>
<td>303</td>
<td>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, and rise of Octavian. Writing-emphasis course. (Same as Classics 303.)</td>
<td>3</td>
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<tr>
<td>304</td>
<td>History of the Roman Empire (3) 27 BC-AD 211. Age of Augustus, expansion of Roman citizenship, Flavian and Antonine dynasties, barbarians and Romans, the Second Sophistic, and the Severans. Writing-emphasis course. (Same as Classics 304.)</td>
<td>3</td>
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<tr>
<td>305</td>
<td>History of the Late Roman Empire (3) AD 197-491. The Severan empire and the 3rd-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.)</td>
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<tr>
<td>306</td>
<td>History of Hellenistic Greece (3) (See Classics 306.)</td>
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<tr>
<td>307</td>
<td>Honors: Introduction/Historical Problems (3) Historical analysis and 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. Registration Permission: Consent of honors director.</td>
<td>3</td>
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<tr>
<td>312</td>
<td>Medieval History (3) Early Middle Ages – 300-1100. Formation of medieval society and institutions. (Same as Medieval Studies 312.)</td>
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<tr>
<td>313</td>
<td>Medieval History (3) Later Middle Ages – 1100-1400. Height of medieval civilization and its waning in the 14th century. (Same as Medieval Studies 313.)</td>
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<tr>
<td>314</td>
<td>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.</td>
<td>3</td>
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<tr>
<td>315</td>
<td>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.)</td>
<td>3</td>
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<tr>
<td>316</td>
<td>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.</td>
<td>3</td>
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<tr>
<td>319</td>
<td>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 bourgeoisie, nationalism, imperialism, rationalism, and Romanticism in social thought and politics. Writing-emphasis course.</td>
<td>3</td>
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<tr>
<td>320</td>
<td>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.</td>
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<td>322</td>
<td>Christian Thought in Late Antiquity (3) (See Religious Studies 322.)</td>
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<td>323</td>
<td>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.</td>
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<tr>
<td>331</td>
<td>History of England (3) 1689 to the present. Seventeenth-century revolutions – commercial, agricultural and industrial. Class conflict, empire, the welfare state, world wars, and economic crisis.</td>
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<td>334</td>
<td>History of Germany (3) 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.</td>
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<td>335</td>
<td>History of Germany (3) Since 1800. The quest for nationhood. The evolution of modern Germany through revolution, industrialization and wars, from Metternich’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.</td>
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<td>339</td>
<td>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.</td>
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<td>341</td>
<td>History of Russia (3) From the middle of the 19th century.</td>
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<td>342</td>
<td>History of Nazi Germany (3) The coming to power of the Nazi party in Germany, origins of ideology, and the 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.</td>
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<td>350</td>
<td>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.</td>
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<td>351</td>
<td>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.</td>
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<td>352</td>
<td>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.</td>
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<td>353</td>
<td>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.</td>
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354 United States, 1877-1933 (3) America’s political, economic, and social development from the Gilded Age through the Great Depression. Writing-emphasis course.

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. Writing-emphasis course.

356 The 1960s in America (3) The politics, social movements, and cultural rebellions of the 1960s. Topics include race riots, anti-war 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 History of Latin America (3) Colonialism and independence – 1500-1825. Writing-emphasis course. (Same as Latin American Studies 360.)

361 History of Latin America (3) National development – 1825 to present. Writing-emphasis course. (Same as Latin American Studies 361.)

366 History and Archaeology of Mesopotamia (3) Mesopotamia (Assyria and Babylonia) from the 5th millennium to the Iron Age. Specific topics will include the development of village and state-level societies and the rise of empires, the politics of conquest and resistance, and the evolution of writing and literacy, imperialism, and intersocietal interaction. Writing-emphasis course.

369 History of the Middle East (3) Rise and spread of Islamic civilization to the 16th century. Writing-emphasis course. (Same as Judaic Studies 369.)

370 History of the Middle East (3) The Middle East from the 16th century to the present. Impact of the West and background of current problems in the area. Writing-emphasis course. (Same as Judaic Studies 370.)

371 African History (3) Survey of sub-Saharan Africa from 700-1700. State creation, trade, and the spread of Islam. Writing-emphasis course. (Same as Africana Studies 371.)

372 African History (3) Dynamics of Africa’s encounter with Europe from 1500 to the present. Slave trade, colonial, and independence eras. Writing-emphasis course. (Same as Africana Studies 372.)

373 Historical Issues (3) Variable content. Broad thematic issues in historical perspective.

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 struggle against colonialism, black 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 Africana 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.)


385 Studies in World History (3) Variable content. Selected topics in world history involving analysis of two or more world cultures.

389 History of China (3) 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. Writing-emphasis course.

390 History of China (3) China since 1600. Highlights China’s transformation from a dynamic 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. Writing-emphasis course.

Credit Restriction: Students who have received credit for 365 may not receive credit for 392.

395 The Crusades and Medieval Christian-Muslim Relations (3) The major Christian crusades in the Middle East and Spain, 1050 to 1500; their political and military history; and the larger context of the medieval religious, cultural, intellectual, and diplomatic confrontation between Christians and Muslims. Writing-emphasis course. (Same as Judaic Studies 395.)

407 Honors: Senior Paper (3) Bibliographic search, research, and conceptual clarification for the senior paper.

408 Honors: Senior Paper (3) Organization and writing of the senior honors thesis. Required of students working for honors in history. Credit Restriction(s): Grade of A or B required for honors credit.

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.

431 European Intellectual and Cultural History (3) 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.)

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, and present-day relationship. Writing-emphasis course.

444 History of the South (3) 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. The formation of an African-American identity. Writing-emphasis course. (Same as Africana 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 Africana 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 World War II.

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 weapons involved in wars. The 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.)
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, and the growth of cities. Changing ideas about deference, class, and community. Writing-emphasis course.

460 History of Brazil (3) History of Latin America's largest nation. History of boom and bust economic cycles, slavery and the abolition of slavery, populism, military rule, and redemocratization. Writing-emphasis course. (Same as Latin American Studies 460.)

462 History of Mexico (3) Pre-Columbian, colonial, national, and modern Mexican history, emphasizing the 20th century's first true social revolution, the Mexican Revolution, and contemporary social and economic problems. Writing-emphasis course. (Same as Latin American Studies 462.)

470 Studies in British History (3) Selected themes and issues in British history. Variable content. Repeatability: May be repeated. Maximum 9 hours.

471 Studies in Western European History (3) Particular aspects of western European history such as witchcraft, revolutions, or nationalism. Variable content. Writing-emphasis course. Repeatability: May be repeated. Maximum 9 hours.

472 Studies in Central European History (3) Variable content. Writing-emphasis course. Repeatability: May be repeated. Maximum 9 hours.

473 Studies in Eastern European History (3) Selected aspects of eastern European history, especially on Russian and Polish history. Variable content. Writing-emphasis course. Repeatability: May be repeated. Maximum 9 hours.


475 Studies in Latin American History (3) Significant issues in Latin American history. Variable content. Writing-emphasis course. (Same as Latin American Studies 475.) Repeatability: May be repeated. Maximum 9 hours.

476 Studies in Asian History (3) Particular aspects of Middle Eastern and East Asian history, such as modernization in the Middle East, revolution in China, Japanese Feudalism, and others. Variable content. Repeatability: May be repeated. Maximum 9 hours.


482 Colloquium in History (3) Historical theme or problem. Emphasis on questions and skills. Special reference to historical writing including critical analysis of both primary and secondary sources. Recommended for seniors. Writing-emphasis course. Repeatability: May be repeated. Maximum 9 hours.

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. Writing-emphasis course.

484 Studies in Jewish History (3) Significant topics in the study of Jewish civilization and culture, including the development of the synagogue, Judaism and ethnicity, and the history of Jerusalem. Variable content. Writing-emphasis course. (Same as Judaic Studies 484.) Repeatability: May be repeated. Maximum 9 hours.

485 Studies in Cross-Cultural History (3) Comparative analysis of specific historical issues or specific facets of the relationships between two or more cultures. Variable content. Repeatability: May be repeated. Maximum 9 hours.

486 Studies in the Ancient Near East (3) History and archaeology of Egypt, Anatolia (Turkey), Cyprus, and Persia (Iran). The rise of social complexity and social boundaries in antiquity. Variable content. Writing-emphasis course. Repeatability: 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 and the Korean War.

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. Repeatability: May be repeated. Maximum 6 hours. Registration Permission: Consent of Director of the Center for the Study of War and Society.

491 Foreign Study (1-15) Repeatability: May be repeated. Maximum 15 hours.

492 Off-Campus Study (1-15) Repeatability: May be repeated. Maximum 15 hours.

493 Independent Study (1-15) Repeatability: May be repeated. Maximum 15 hours.

Hotel, Restaurant, and Tourism (514)

101 Science of Foods (3) Scientific principles involved with selection, preparation, and evaluation of quality food. (Same as Food Science and Technology 101.) Contact Hour Distribution: 2 hours lecture and 2 hours lab each week.

210 Foodservice Operations Management (3) Principles of menu development, equipment selection, layout, purchasing, production, and service of food in volume.

211 Hotel and Resort 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.

212 Conventions, Meetings, and Events (3) Understanding the concepts and models of conventions/meetings, roles of meeting planners, identifying decision makers, site selection, negotiating, budgeting, and marketing commitment.

224 Tourism Management (3) Examination of the various components of the tourism industry, motivators to travel, and the various market segments. Includes analyses of the economic, social, cultural, and environmental impacts to tourism.

311 Human Resources Management in Hospitality and Retailing (3) The core concepts of managing an organization's culturally-diverse workforce—recruitment and selection, training and development, and employee relations. (Same as Retail and Consumer Sciences 311.) (RE) Prerequisite(s): 210 or Retail and Consumer Sciences 210. (DE) Prerequisite(s): 211, 212, or 224.

326 Food and Lodging Cost Control (1-3) Budget, cost analysis, computer, financial statement use in decision-making in lodging and foodservice systems. Repeatability: Not repeatable for credit. May be taken once for 1-3 hours. (RE) Prerequisite(s): 210 and Accounting 200. (DE) Prerequisite(s): Mathematics 123 and Mathematics 119.

330 Working with Diversity in the Service Industry (3) Offers improved understanding and ability to effectively manage a diverse hospitality workforce. Dimensions of diversity presented and discussed from historical, psychological, and sociological perspectives to provide a depth of understanding and appreciation of difference, and its impact on society and work. (RE) Prerequisite(s): 210 or 211. (DE) Prerequisite(s): 212 or 224 and English 101, 102. Registration Permission: 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. (RE) Corequisite(s): 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, and motivational and negotiating skills. (Same as Retail and Consumer Sciences 390.) (WC) (RE) Prerequisite(s): 311. (DE) Prerequisite(s): 326, 310, and English 101 and 102. Registration Restriction(s): Hotel, restaurant, and tourism major or retail and consumer sciences major.

392 Professional Experience I (3) Supervised educational experiences in selected hospitality operations. Grading restriction: Satisfactory/No Credit grading only. (RE) Prerequisite(s): 390. Registration Restriction(s): Hotel, restaurant, and tourism major.

410 Strategic Planning for the Hospitality Industry (4) Hospitality management from a strategic planning perspective. Introduces model, methods, and techniques that can be used to identify strategic issues, and generate future-oriented action plans. Explores the manager’s role as a strategic thinker. Includes a lab in which students will be presented with real world business problems and asked to generate solutions. Contact Hours Distribution: 3 hours and 1 hour lab. (RE) Prerequisite(s): 390.
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.

(RE) Prerequisite(s): 211 and 224.
(DE) Prerequisite(s): Marketing 300.

425 Legal Issues in Service Management (3) Legal rights and responsibilities of service industry managers, their staff, and clientele.

(Re) Prerequisite(s): 390.

435 Meeting Planning, Special Events, and Convention Management (3) Management techniques used in the execution of meetings, marketing, conventions, and special events. Emphasis on integration of management principles and strategic planning.

(Re) Prerequisite(s): 210 or 212.
Registration Permission: Consent of instructor.

440 Special Topics: Hotel, Restaurant, and Tourism (1-3) Developments, issues, and problems in hotel, restaurant, and tourism.

Variable topics.

Repeatability: 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.

Contact Hour Distribution: 2 hours and 1 lab.

(Re) Prerequisite(s): 210.

450 Advanced Lodging Management (3) 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.

(Re) Prerequisite(s): 211 and 390.
(De) Prerequisite(s): Marketing 300.

484 International and Multicultural Tourism (3) Examines international and intercultural tourism trends, planning, and development issues. Special emphasis is given to the factors affecting patterns of international travel, planning practices, facilities, and services necessary to attract and host international tourists, and the development and operation of tourism attractions in developing countries. An overseas study tour is required as part of this course.

492 Professional Experience II (6) Supervised managerial training with sponsoring hospitality organizations.

(Re) Prerequisite(s): 392 and 410.

494 Directed Study: Hotel, Restaurant, and Tourism (1-3) Individual student-faculty experience.

Grading Restriction: Satisfactory/No Credit grading only.
Repeatability: May be repeated. Maximum 6 hours.
Registration Restriction(s): Minimum student level – junior.
Registration Permission: Consent of instructor.

Human Resource Management (530)


(Re) Corequisite(s): Business Administration 353.
Registration Restriction(s): Majors in the College of Business Administration.

340 Training Systems: Strategies and Techniques (3) Fundamental knowledge, strategies and techniques of training systems – needs assessment, transfer of training, methods, evaluation. Broadening roles of training due to its strategic nature, changing nature of the workforce, the workplace, and technology. Developing original training modules with multiple components.

(Re) Corequisite(s): Business Administration 353.
Registration Restriction(s): Majors in the College of Business Administration.

350 Employee and Labor Relations (3) Evolution of and current practices related to effective workplace relations between the employer and employee. The examination of the union and nonunion environments for the organization. The establishment and maintenance of a safe, healthy, diverse and secure workplace.

(Re) Corequisite(s): Business Administration 353.
Registration Restriction(s): Majors in the College of Business Administration.

460 Compensation, Benefits, and Technologies for Human Resource Management (3) Compensation and benefits including direct and indirect compensation. Total reward systems that are used by companies and the common parts of a reward system. Mandated regulations of compensation and benefits, e-HR technologies and systems used for compensation and benefits management.

(Re) Prerequisite(s): Business Administration 353.
Registration Restriction(s): Majors in the College of Business Administration.

470 Staffing Organizations (3) Theory, methods, and issues pertaining to technical aspects of successful organizational staffing – legal environment, measurement and validation, performance appraisal and criterion development, selection tests, and recruitment.

(Re) Prerequisite(s): Business Administration 353.
Registration Restriction(s): Majors in the College of Business Administration.

492 Off-Campus Study (1-6) Practical application and classroom instruction in human resources. Aspects of career development and the transition to the corporate world.

Repeatability: May be repeated. Maximum 6 hours.
Registration Restriction(s): Human resource management major.
Registration Permission: Consent of instructor.

493 Independent Study (3) Readings, research, and special projects.
Repeatability: May be repeated. Maximum 6 hours.
Registration Restriction(s): Majors in the College of Business Administration.
Registration Permission: Consent of instructor.

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.

Contact Hour Distribution: 2 hours lecture and 2 hours lab.

(Re) Prerequisite(s): Engineering Fundamentals 230.
(Re) Corequisite(s): Statistics 251.
Recommended Background: Completion of freshman engineering courses.
Comment(s): Available to other majors who have completed an introductory course in probability and statistics.

250 Sophomore Cooperative Learning Experience (1) Exposure to the real-world practice of industrial engineering. Sophomores will be placed on teams with juniors and seniors and assigned a company or organization to study. The objectives are to develop observation and listening skills, teaming skills, and mentoring skills; and to provide the opportunity to gain a better understanding of industrial engineering as a discipline by observing industrial engineering in action. Students will be required to maintain a journal documenting their individual experiences and reflections, including what the student has learned about effective team playing, the job of a practicing industrial engineer, and what the student was able to learn from or teach fellow team members. Each team will work on a project for the organization or company assigned, scoped and defined in sufficient detail for a problem of interest, and recommending a solution methodology. These project reports will go into a problem bank that will be used by Industrial Engineering 422 as a source of topics for senior design projects.

Contact Hour Distribution: 2-hour lab.

Grading Restriction: Satisfactory/No Credit grading only.
(Re) Prerequisite(s): Engineering Fundamentals 152.
Registration Restriction(s): Industrial engineering major; minimum student level – sophomore.

300 Engineering Data Analysis and Process Improvement (3) Engineering statistical methods as applied to modern engineering and business environments, process improvement, inferences about process output and behavior, and measurement systems. An introduction to the use of designed experiments to improve process.

Contact Hour Distribution: 3 hours lecture.
(Re) Prerequisite(s): Statistics 251 or Mechanical Engineering 345.
Comment(s): Available to other majors who have completed an introductory course in probability and statistics.

301 Operations Research in Industrial Engineering I (3) Integrated system modeling concepts. Linear mathematical programming models including the original simplex procedure, transportation and assignment problem procedures, revised simplex procedure, dual simplex procedure, parametric linear programming (sensitivity analysis), and integer linear programming.
(Re) Prerequisite(s): Mathematics 200.
Recommended Background: Completion of an introductory course in probability and statistics.
304 Introduction to Human Factors Engineering (3) Human capabilities and limitations affecting work, workplace, 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, and environmental factors such as noise, light, and atmospheric conditions. Focus on designing the task to fit the person.

Comment(s): Available to other majors who have completed an introductory course in probability and statistics.

Recommendation(s): Minimum student level – junior.

310 Operation Research in Industrial Engineering II (3) Network models, including PERT-CPM. Introduction to nonlinear programming, dynamic programming, stochastic processes, and queuing theory. Basic decision analysis techniques and their applications in engineering practice.

(RE) Prerequisite(s): 300 and 301.

Recommended Background: Completion of a computer-programming course.

330 Manufacturing Materials/Processes (3) Characteristics of materials and processes used in modern manufacturing.

(RE) Prerequisite(s): Materials Science and Engineering 201.

340 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.

Contact Hour Distribution: 2 hours lecture and 1 lab.

(RE) Prerequisite(s): 202 and 300.

Recommended Background: Completion of an introductory course in probability and statistics.

350 Junior Cooperative Learning Experience (1) Exposure to the real-world practice of industrial engineering. Juniors will be placed on teams with sophomores and seniors and assigned a company or organization to study. The objectives are to develop technical writing skills, teaming skills, and mentoring skills; and to provide the opportunity to apply and integrate course content in the IE curriculum in a real-world context. Students will be required to maintain a journal documenting their individual experiences and reflections, including what the student has learned about effective team playing, the application of industrial engineering in a practical setting, and what the student was able to learn from or teach fellow team members. Each team will work on a project for the organization or company assigned, including the application of team building and mentoring skills. The project reports will be used by Industrial Engineering 422 as a source of topics for senior design projects.

(contact info)

Grading Restriction: Satisfactory/No Credit grading only.

Contact Hour Distribution: 2-hour lab.

Registration Restrictions: Industrial engineering major; minimum student level – junior.

401 Integrated Manufacturing Systems (3) NC and CNC machine tools, robotics and related materials handling systems, hard automation, alternative integrated manufacturing systems, and manufacturing information/control systems.

(RE) Prerequisite(s): 202 and 330.

402 Production System Planning and Control (3) Theory and application of forecasting systems, including regression and time series models. Independent demand inventory models, including development of safety stock. All modules of Manufacturing Resource Planning (MRP) Systems. Master production scheduling, resource requirements planning, bill of material and inventory file structures, material requirements planning, capacity planning, shop floor and purchase order control. Overview of just-in-time inventory concepts and MRP's role in manufacturing automation.

(RE) Prerequisite(s): 202 and 310.

404 Industrial Engineering Applications (1) Enhances and integrates the industrial engineering educational experience in preparing senior industrial engineering students for their transition to professional practice.

Grading Restriction: Satisfactory/No Credit grading only.

(RE) Corequisite(s): 422.

Recommended Background: Completion of one semester of industrial engineering senior-level courses.

Registration Permission: Consent of instructor.


Registration Restriction(s): Restricted to majors in the College of Engineering; minimum student level – junior.

406 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.

Contact Hour Distribution: 2 hours lecture and 1 lab.

(RE) Prerequisite(s): 300 and 310.

Recommended Background: Completion of 202 and an introductory course in probability and statistics.

421 Information Systems Analysis and Design (3) Systems engineering approach to analysis and design of systems of information. Topics – 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.

(RE) Corequisite(s): 402.

Recommended Background: Completion of an introductory course in probability and statistics.

Registration Restriction(s): Completion of 202 and an introductory course in probability and statistics.

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 students 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.

Recommended Background: Completion of one semester of industrial engineering senior-level courses.

Registration Permission: Consent of instructor.


Registration Restriction(s): Minimum student level – senior.

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 systems. 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.

(RE) Corequisite(s): 406.

Recommended Background: 350, 401, and completion of an introductory course in probability and statistics.

450 Senior Cooperative Learning Experience (1) Exposure to the real-world practice of industrial engineering. Seniors will be asked to lead teams that consist of seniors, juniors, and sophomores. These teams will be assigned a company or organization to study. The objectives are to develop leadership skills, teaming skills, and mentoring skills; and to provide the opportunity to apply and integrate course content in the IE curriculum in a real-world context. Students will be required to maintain a journal documenting their individual experiences and reflections, including any leadership issues that arose and how the student dealt with them, what the student has learned about effective team playing, the application of industrial engineering in a practical setting, and how the student used his/her knowledge and leadership skills to mentor Junior and Sophomore members of the team. Each team will work on a project for the organization or company assigned, including the application of team building and mentoring skills. The project reports will be used by Industrial Engineering 422 as a source of topics for senior design projects.

Grading Restriction: Satisfactory/No Credit grading only.

Registration Restriction(s): Industrial engineering major; minimum student level – senior.
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.

(RE) Prerequisite(s): 421.
Recommended Background: Completion of an introductory course in probability and statistics.

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.

(RE) Prerequisite(s): 304.
Recommended Background: Completion of an introductory course in probability and statistics.
Registration Restriction(s): Minimum student level – junior.

483 Introduction to Reliability Engineering (3) (See Nuclear Engineering 483.)

484 Introduction to Maintenance Engineering (3) (See Nuclear Engineering 484.)

493 Special Topics (1-3) Recent developments in industrial engineering including new areas of application, new research techniques, and new methodologies.
Repeatability: May be repeated: Maximum 6 hours.
Registration Restriction(s): Minimum student level – junior.

494 Special Topics (1-3) Recent developments in industrial engineering, including new areas of application, new research techniques, and new methodologies.
Repeatability: May be repeated: Maximum 6 hours.
Registration Restriction(s): Minimum student level – junior.

495 Special Topics (1-3) Recent developments in industrial engineering including new areas of application, new research techniques and new methodologies.
Repeatability: May be repeated. Maximum 6 hours.
Registration Restriction(s): Minimum student level – junior.

Information Management (558)

341 Business Process Analysis (3) Topics include strategic uses of information technology in business processes, analysis of business processes (including transaction processing cycles), analysis of business process risk exposures and controls, and conceptual modeling and the development of information systems.

(RE) Corequisite(s): Business Administration 342.
Registration Restriction(s): Majors in the College of Business Administration, minimum student level – junior.

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 with modern database management systems software and develop database project management skills.

(RE) Prerequisite(s): 341.
Registration Restriction(s): Majors in the College of Business Administration.

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.

(RE) Prerequisite(s): 341.
(RE) Corequisite(s): 342.
Registration Restriction(s): Majors in the College of Business Administration.

443 Business Applications and Tools (3) Fundamentals of business application logic, business application architectures, and project management. Students learn to apply advanced tools associated with spreadsheets and databases (using Visual Basic algorithms).

(RE) Prerequisite(s): 341.
(RE) Corequisite(s): 342.
Registration Restriction(s): Majors in the College of Business Administration.

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.

301 Introduction to Web Technologies (3) Introduction to the Internet and World Wide Web technologies and practices. Topics include the history and development of the World Wide Web and the Internet; standards-compliant markup and tools for creation of markup (e.g., XHTML and style sheets); introductory Web page and Web site design.

310 Information Seeking: Resources and Strategies (3) Information as a critical resource for research and decision-making. Emphasis on planning, executing, and evaluating information searches. Focus on topic of student’s major.


351 Race, Gender and Information Technology (3) Examines how expression of gender and race affect, and are affected by, information technologies. Course considers how information technologies interact with race and gender in various contexts: high-technology workplaces; classification and organization; cultures of computing; and library and information-centered environments. The course is framed by two broad, interrelated concepts – the expression of identity (individual and group) in cyberspace and the “digital divide,” and reviews theoretical background in the social studies of gender, race, technology, and knowledge.

410 History of the Book (3) History of writing and various methods of bookmaking.

450 Writing About Science and Medicine (3) (See Journalism and Electronic Media 450.) (WC)

451 Information Management in Organizations (3) Introduces concepts and techniques for the interdisciplinary study of information, organizations, technology, and individuals, sometimes referred to as knowledge management. Topics include characteristics of data, information and knowledge; introduction to knowledge management; sensemaking in organizations; organizational learning; intellectual capital; communities of practice; ecological approaches; knowledge acquisition, representation and information organization; uses of information technology for information and knowledge management; and roles of professionals in managing information management initiatives.

(RE) Prerequisite(s): 310.
Comment(s): Prior knowledge may satisfy prerequisite, with consent of instructor.

460 Internet Applications and Technologies (3) Introduces World Wide Web and related Internet technologies (e.g., XHTML, XML, CSS) and how they are used to solve organizational, individual, discipline-specific and social problems. Topics include the history of and the role of Internet standards in the design of information systems; metadata; principles and practices of standards-compliant, accessible Web design; informatics.

(RE) Prerequisite(s): 301.
Comment(s): Prior knowledge may satisfy prerequisite, with consent of instructor.

461 Information Architecture and the User Experience (3) Introduction to the design of the representational systems and interaction paradigms required of effective information systems. Topics include taxonomy creation; interface design; and techniques for design testing and validation.

(RE) Prerequisite(s): 301.
Comment(s): Prior knowledge may satisfy prerequisite, with consent of instructor.

470 Advanced Internet Applications and Technologies (3) Principles and practices of applying advanced techniques and standards to organizational, individual, discipline-specific, and social information problems; applications in discipline-specific branches of informatics. Topics include semantic Web technologies; server- and client-side scripting; and the use of databases in Web-based information systems.

(RE) Prerequisite(s): 460.
Comment(s): Prior knowledge may satisfy prerequisite, with consent of instructor.
495 Special Topics (3) Detailed study of a specialized area of information studies or information technology. Topics vary by semester.

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.

Registration Restriction(s): Qualification—admission to teacher education.

Instructional Technology and Cultural Studies (572)
495 Special Topics (1-3) Topics to be assigned.

Repeatability: May be repeated. Maximum 12 hours.

Interdisciplinary Programs (581)
100 Selected Topics (1-3)

Repeatability: 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.

Repeatability: May be repeated. Maximum 12 hours.

491 Foreign Study (1-15)

Repeatability: May be repeated. Maximum 15 hours.

Registration Permission: Consent of Director of Interdisciplinary Studies.

492 Off-Campus Study (1-15)

Repeatability: May be repeated. Maximum 15 hours.

493 Independent Study (1-15)

Repeatability: May be repeated. Maximum 15 hours.

Interior Design (582)
141 Introduction to Interior Design (2) Orientation to the profession, relationship to allied fields, contemporary development, and philosophical approaches.

Registration Restriction(s): Interior design major or architecture major.

Registration Permission: Consent of instructor.

171 Visual Studies (3) Classification and properties of two and three-dimensional visual organization. Design principles and visual and spatial elements within simple and complex visual systems. The role of movement in experiencing scale and volumetric space.

Contact Hour Distribution: 3-hour studio.

(RE) Prerequisite(s): Architecture 121 and Architecture 171.

Registration Restriction(s): Interior design major.

172 Introduction to Microenvironments (3) Human perceptions in micro-scale environments (residential, commercial, and public spaces). Introduction to basic analytic and behavioral programming techniques.

Contact Hour Distribution: 3-hour studio.

(TE) Prerequisite(s): 171 and Architecture 171.

177 Honors: Introduction to Microenvironments (3) Student will attend Interior Design 172 studio classes with supplementary assignments required, including an individual research project.

(TE) Prerequisite(s): 171 and Architecture 171.

Registration Permission: Consent of interior design program.


221 Theory of Color (2) Introduction to basic color theory and its application to interior environments. Explores aesthetics and psycho-physiological effects.

(TE) Prerequisite(s): 172 and Architecture 172.

261 Materials and Resources for Interiors (2) The development and application of materials and resources used in interior architectural space.

(TE) Prerequisite(s): 172.


Contact Hour Distribution: 6-hour studio.

(TE) Prerequisite(s): 172 and Architecture 171.

(DE) Prerequisite(s): 141 and Mathematics 123.

272 Interior Design Studio II (6) Problem-solving, spatial organization of microenvironments, increasingly larger scale. Emphasis on digital communication; computer-aided design and drafting, desktop publishing, graphic imaging, and reproduction.

Contact Hour Distribution: 6-hour studio.

(TE) Prerequisite(s): 271.

(TE) Corequisite(s): 221.

311 History of Interior Architecture (4) Interior architecture, decoration and decorative arts within cultural context, ancient through 19th centuries with emphasis on Italy, France, England, and America.

(TE) Prerequisite(s): Art History 172 and Art History 173.

(TE) Prerequisite(s): 272.

312 History of Contemporary Interior Architecture (2) Interior architecture, furniture, design philosophies, 19th-century roots for 20th-century developments, Europe and America. Design as influenced by movements in the fine arts, technological advances, and cultural context.

(TE) Prerequisite(s): 311.

331 Drawing and Construction Documentation (2) Building on previous computing skills, this course focuses on interior construction documentation through computer-aided design applications. The vehicle for this course will involve a small-scale design problem and will emphasize technical graphic conventions, codes and regulations affecting the health, safety, and welfare of public.

Contact Hour Distribution: 6-hour studio.

(TE) Prerequisite(s): 272 and 261.

(TE) Prerequisite(s): 221.

360 Business Principles and Practices (3) Interprofessional relationships and business practices, responsibilities, and liabilities.

(TE) Prerequisite(s): 272.

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.

Contact Hour Distribution: 6-hour studio.

(TE) Prerequisite(s): 272 and 261.

(TE) Prerequisite(s): 221.

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.

Contact Hour Distribution: 6-hour studio.

(TE) Prerequisite(s): 371 and 331.

420 Practicum for Interior Design (3) Supervised experience in a professional design firm. Business practices, project management, and design philosophy.

(TE) Prerequisite(s): 360 and 372.

433 Digital Graphics for Interior Design (3) Theory and techniques of visual problem solving as applied to application of interior design.

Contact Hour Distribution: 3-hour studio.

(TE) Prerequisite(s): 272 and Architecture 231.

Registration Restriction(s): 3.00 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.

(TE) Prerequisite(s): 271 and Physics 161.

(TE) Corequisite(s): 372.

471 Advanced Interior Design I (6) Non-residential studio problems of advanced complexity. Integrates and extends previous experiences utilizing systematic design methodologies.

Contact Hour Distribution: 6-hour studio.

(TE) Prerequisite(s): 372 and 420.

(TE) Prerequisite(s): 460.

472 Advanced Interior Design II (6) Comprehensive studio problems of advanced complexity. Integrates and extends previous experiences utilizing systematic design methodologies.

Contact Hour Distribution: 6-hour studio.

(TE) Prerequisite(s): 471.

477 Honors: Advanced Interior Design II (6) Student will attend Interior Design 472 comprehensive design studio classes with supplementary design assignments required.

(TE) Prerequisite(s): 471.

Registration Permission: Consent of interior design program.
480 Furniture Design (3) Human factors data applied to design of body support, task support, storage and systems, construction drawings, and scale models. Advanced millwork design and materials and manufacturing processes.
Contact Hour Distribution: 2-hour lecture and 2-hour studio.
(Re) Prerequisite(s): 372 or Architecture 372.

491 International Study (1-15) Individual or group studio and/or study abroad. Academic research, field investigation, or studio experiences. Determination of credit based on particular international experience.
Repeatability: May be repeated. Maximum 15 hours.

493 Directed Studies in Interior Design (1-4) Student- or staff-initiated research or studio investigation of special topic.
Repeatability: May be repeated. Maximum 8 hours.
Credit Restriction: Elective credit only.

International Business (583)

409 International Business (3) Survey of strategic implications of conducting business operations in an international context. Analysis of relevant cross-national environments, including cultural, political, economic, and legal characteristics.
(Re) Prerequisite(s): Business Administration 361.
Comment(s): Students must be admitted to an international business collateral or dual concentration.
Registration Restriction(s): Majors in the College of Business Administration.

419 International Environment and Management (3) Critical knowledge about how changing international environments create new complex challenges for international managers. Analysis of international environments at global, regional, and individual-country levels. Exposure to practical problems arising from specific cultural, political, economic, and technological diversity at various units of analysis in organizations.
(Re) Prerequisite(s): Business Administration 361.
Comment(s): Students must be admitted to an international business collateral or dual concentration.
Registration Restriction(s): Majors in the College of Business Administration.

Credit Restriction: Students may not receive credit for both International Business 429 and Economics 322.
(Re) Prerequisite(s): Business Administration 361.
Comment(s): Students must be admitted to an international business collateral or dual concentration.
Registration Restriction(s): Majors in the College of Business Administration.

439 Global Supply Chain Management (3) Explores the complexities of managing supply chains in a global context. Addresses issues relating to the drivers of globalization and managing the supply and demand fulfillment processes across an extended and global organization. Topics include discussions of cultural differences, regional trading blocs, global procurement, offshoring, global infrastructure, security and risk, sustainability, market entry, service quality, gray markets, customer lifetime value, demand/supply integration.
(Re) Prerequisite(s): Business Administration 331 and Business Administration 361.
Comment(s): Students must be admitted to an international business collateral or dual concentration.
Registration Restriction(s): Majors in the College of Business Administration.

449 International Finance (3) Understanding the intricacies of international finance including how multinational companies operate in a number of different business activities within multiple countries. Topics covered include international monetary system, balance of payments, exchange rate utilization, and foreign exchange derivatives including currency forwards, futures options and swaps.
(Re) Prerequisite(s): Business Administration 361 and Finance 301.
Comment(s): A grade of C or better in the prerequisite is required.
Registration Restriction(s): Majors in the College of Business Administration.

459 International Competition and Performance (3) Explores how globalization affects the strategic management of firms. Focus on firm strategies, processes and performance outcomes within an industry context. Addressed issues such as the historic rise of manufacturing multinationals and challenges of recent global growth of service and retail enterprises. Topics include: measuring performance differences across competitors, how domestic defenders challenge multinationals, roll-up strategies to manage global growth, and leadership and structural challenges of global competition.
(Re) Prerequisite(s): Business Administration 361.
Comment(s): Students must be admitted to an international business collateral or dual concentration.
Registration Restriction(s): Majors in College of Business Administration.

489 Study Abroad (0) Study abroad program approved by the College of Business Administration Undergraduate Programs Office.
Grading Restriction: Satisfactory/No Credit grading only.
Registration Restriction(s): Admission to the College of Business Administration.

Italian (584)

111 Elementary Italian (3) Introduction to Italian. Language laboratory required.
112 Elementary Italian (3) Introduction to Italian. Language laboratory required.
(Re) Prerequisite(s): 111.
211 Intermediate Italian (3) Sequence stresses reading, writing, listening, and speaking Italian to prepare for upper-division courses in the language. Language laboratory required. (CC)
(Re) Prerequisite(s): 112.
212 Intermediate Italian (3) Sequence stresses reading, writing, listening, and speaking Italian to prepare for upper-division courses in the language. Language laboratory required. (CC)
(Re) Prerequisite(s): 211.
311 History of Italian Literature (3) Chronological view of Italian literature in relation to the specific historical developments that have influenced it.
(Re) Prerequisite(s): 212.
314 Highlights of Italian Civilization (3) Survey of Italian civilization with special attention to major social, political, and cultural achievements.
(Re) Prerequisite(s): 212.
341 Intermediate Grammar, Composition and Conversation (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.
(Re) Prerequisite(s): 212.
342 Intermediate Grammar, Composition and Conversation (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.
(Re) Prerequisite(s): 341.
401 Dante and Medieval Culture (3) Introduction to the significance of this great Italian writer. Writing-emphasis course. (Same as Medieval Studies 401.)
402 Petrarch and Boccaccio (3) Writing-emphasis course. (Same as Medieval Studies 402.)
403 Literature of the Rinascimento (3) From Pucci to Tasso, the Quattrocento and the Cinquecento.
409 Directed Readings (3)

411 Aspects of Modern Literature and Culture (3) Representative works of modern literature and culture.
120 Advanced Literary Reading and Conversation (3) Representative works of contemporary literature and culture.

414 Italian Cultural Studies (3) This course will examine Italian culture as a set of practices characteristic of Italian society, from its roots 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.

422 Topics in Italian Cinema (3) Examination of Italian cinema from 1930 to the present focusing on feature films, documentaries and, depending on the topic of the course, on literary works in light of political, cultural, and social contexts. Films are shown in Italian with English subtitles. Writing-emphasis course. (Same as Cinema Studies 422.)
Repeatability: May be repeated. Maximum 6 hours.
Comment(s): Open to non-majors. Majors will read texts and write papers in Italian.

490 Internship (1-15) Career-related experiences in the United States or abroad.
Grading Restriction: Satisfactory/No Credit grading only.
Repeatability: May be repeated. Maximum 15 hours.
Registration Restriction(s): Italian major/language and world business concentration.

491 Foreign Study (1-15)
Repeatability: May be repeated. Maximum 15 hours.

493 Independent Study (1-15)
Repeatability: May be repeated. Maximum 15 hours.
Japanese (589)

151 Elementary Japanese I (5) (See Asian Languages 151.)
152 Elementary Japanese II (5) (See Asian Languages 152.)
251 Intermediate Japanese I (5) (See Asian Languages 251.) (CC)
252 Intermediate Japanese II (5) (See Asian Languages 252.) (CC)
313 Japanese Literature in English Translation (3) (See Asian Languages 313.)
314 Japanese Literature in English Translation (3) (See Asian Languages 314.)
321 Japanese Graphic Novels and Animation (3) (See Asian Languages 321.)
351 Advanced Japanese I (4) (See Asian Languages 351.)
352 Advanced Japanese II (4) (See Asian Languages 352.)
413 Topics in Japanese Literature (3) (See Asian Languages 413.)
451 Readings in Pre-Modern Japanese Literature (3) (See Asian Languages 451.)
452 Readings in Modern Japanese Literature (3) (See Asian Languages 452.)

Journalism and Electronic Media (592)

Contact Hour Distribution: Lecture and lab. (RE) Prerequisite(s): English 102 and Communication and Information 150.
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. (WC)
Credit Restriction(s): Credit not available for majors in the College of Communication and Information.
(RE) Prerequisite(s): English 102.
236 Foundations of Video Production (3) A foundational course designed to introduce the process of writing and producing video programs. Includes lectures and lab hours in both studio and field production. Students are introduced to writing and aesthetics while working hands-on with all studio and field equipment in the electronic video process from conception through production to post-production. As part of this class, students will provide production support for on-going cable television programs produced for the campus cable channel. Contact Hour Distribution: Lecture and lab. (RE) Prerequisite(s): 200 and 275.
275 Introduction to Journalism and Electronic Media (3) Overview of print and electronic media, including content selection, delivery methods, economic and ownership structures, and media effects. Contact Hour Distribution: Lecture and lab.
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. Contact Hour Distribution: Lecture and lab. (RE) Prerequisite(s): 200 or 201.
290 Photojournalism (3) Principles and practice of photography as a creative tool of communication. Basic camera technique, digital photography, historical and contemporary photojournalism. Contact Hour Distribution: Lecture and lab.
302 Readership and Audience Analysis (3) Measurement and analysis of readership/audience. Broad overview of methods used for newspaper, magazine, radio, television, cable, and the Internet. Applications to both internal decision-making and external communication in media. (RE) Prerequisite(s): 275.
311 Electronic News Writing and Reporting (3) Writing and reporting for electronic news media (radio, television/cable, and the Internet). Lecture and lab course with writing emphasis. Introduction to Computer Assisted Reporting (CAR). Contact Hour Distribution: Lecture and lab. (RE) Prerequisite(s): 200 and 275.
315 Print/Web News Writing and Reporting (3) Gathering and writing news for publication in magazines and newspapers. (RE) Prerequisite(s): 200.
320 Mass Media Commercial Writing and Promotion (3) Study of mass media (print, radio, television, cable, and the Internet) commercial writing and promotion with an emphasis on writing persuasive messages. Analysis of markets and research data. Planning promotional campaigns. (RE) Prerequisite(s): 200 and 275.
333 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. Contact Hour Distribution: Lecture and lab. (RE) Prerequisite: 315 or Public Relations 320.
336 Intermediate Video Production (3) Emphasis on concepts related to message design, development, field acquisition, writing, digital videography, producing, and directing video productions. Students are introduced to non-linear digital editing. As part of the class, students provide production support for on-going programs produced for digital cable television channel. Contact Hour Distribution: Lecture and lab. (RE) Prerequisite: 236.
360 Electronic Media Performance (3) Development of vocal, visual, and performance skills for announcers, interviewers, newscasters, and reporters. Contact Hour Distribution: Lecture and lab. (RE) Prerequisite(s): 275.
365 Sports Broadcasting (3) Introduction to the skills needed to perform as a radio or TV sportscaster. Includes voice and diction training, interviewing athletes, radio and TV sportscasting, and play-by-play techniques. Contact Hour Distribution: Lecture and lab. (RE) Prerequisite(s): 200 and 275.
375 Sports Reporting Across the Media (3) An introductory course in gathering, writing, and presenting sports news in a variety of formats, including print, photography, radio, television, and the Web. (RE) Prerequisite(s): 200 and 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.
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. Contact Hour Distribution: Lecture and lab. (RE) Prerequisite(s): 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.
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. (WC)
(RE) Prerequisite(s): 333.
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. Contact Hour Distribution: Lecture and lab. (RE) Prerequisite(s): 414.
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. (RE) Prerequisite(s): 302 and 320.

Contact Hour Distribution: Lecture and lab. (RE) Prerequisite: 222.

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.

(RED Prerequisite(s): 333.

433 Editing and Layout for Print/Web (3) Editing and layout for newspapers, magazines, and online publishing.

Contact Hour Distribution: Lecture and lab. (RE) Prerequisite: 333.

436 Advanced Video Production (3) Students are actively involved in the program development process, including conceiving, writing, and producing original video productions, as well as maintenance of existing shows airing weekly on the university's digital cable channel. Advanced post-production techniques, including non-linear digital editing.

Contact Hour Distribution: Lecture and lab. (RE) Prerequisite: 336.

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. (WC)

446 Video Capstone (3) Overview of production management. The course will be taught in conjunction with visiting professionals from a variety of corporate and commercial video production facilities. In-depth seminars on production management, including budgeting, planning, staffing, producing, directing, and evaluating video projects. Students are involved in managing productions produced for digital cable channel.

(RED Prerequisite: 436.

450 Writing about Science and Medicine (3) Writing workshop to analyze examples of successful science writing and write series of articles for the general public based on scientific journals, news conferences, technical meetings, and interviews. (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. (WC)

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. (WC)

457 Media and Society (3) Media processes and effects on society. Major theories/research are introduced and applied to current issues. (RE) Prerequisite(s): 200 and 275.

460 Electronic News Operations (3) Production of news programs for television, cable, and the Internet. Advanced course in electronic news gathering, reporting, digital videography, non-linear editing, and producing. Computerized newsroom and studio are utilized.

Contact Hour Distribution: Lecture and lab. (RE) Prerequisite(s): 411.

465 Media and Diversity (3) Major theories/research are introduced regarding media effects on public perceptions and attitudes toward various social groups (e.g., groups based on gender, class, race, sexual identity, and sexual orientation). Discussion of historical and legal implications of media effects. (Same as Women's Studies 465.)

(RED Prerequisite(s): 200 and 275.

Registraion permission: Consent of instructor.

470 Cable, Broadcast, and Interactive Digital Media (3) History and structure of cable television and other broadcast delivery systems (DBS, Internet, etc.). Development of digital broadcasting, interactive television, and other broadband media systems and digital technologies. Regulatory, policy, programming, and management issues arising from new media and digital technologies.

(RED Prerequisite(s): 275.

475 Sports Writing (3) 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.


(RED Prerequisite(s): 275.

485 Media Management (3) Business policies and practices of newspaper, broadcast, cable, and Internet operations. Departmental functions, cost and income analysis, and leadership styles and techniques with an emphasis on mid- and senior-level management. Job-hunting guidelines provided.


Contact Hour Distribution: Lecture and lab. (RE) Prerequisite(s): 290.

491 Foreign Study (1-15) Repeatability: May be repeated. Maximum 15 hours.

Comment(s): Approval of hours and topics by advisor required.

492 Practicum (1-2) Work and learning experience at newspaper, radio, television, cable, Web, or other non-broadcast facilities. Final written report required.

Grading Restriction: Satisfactory/No Credit grading only.

Repeatability: May be repeated. Maximum 2 hours.

Registration Restriction(s): Minimum student level – senior.

493 Independent Study (3) Repeatability: May be repeated. Maximum 6 hours.

494 Special Topics (3) Topics vary.

Repeatability: May be repeated. Maximum 6 hours.

498 Internship (3) 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 the university. Final term paper.

Credit Restriction(s): No retroactive credit for previous work experience.

Registration Restriction(s): Minimum student level – senior.

Judaic Studies (595)

311 Ancient Hebraic Religious Traditions (3) (See Religious Studies 311.)

312 Religious Aspects of Biblical and Classical Literature (3) (See Religious Studies 312.)

320 Women and Religion (3) (See Religious Studies 320.)

322 Medieval Philosophy (3) (See Philosophy 322.) (WC)

350 German-Jewish Topics in Literature and Culture (3) (See German 350.)

369 History of the Middle East (3) (See History 369.)

370 History of the Middle East (3) (See History 370.)

381 Introduction to Judaism (3) (See Religious Studies 381.)

383 History of Jewish Civilization I (3) (See History 383.)

384 History of Jewish Civilization II (3) (See History 384.)

385 Contemporary Jewish Thinkers (3) (See Religious Studies 385.)

386 Voices of the Holocaust (3) (See Religious Studies 386.)

395 The Crusades and the Medieval Christian-Muslim Relations (3) (See History 395.)

405 Modern Jewish Thought (3) (See Religious Studies 405.)

425 Early Christian and Byzantine Art to 1350 (3) (See Art History 425.)

431 Medieval Art of the West 800-1400 (3) (See Art History 431.)

484 Studies in Jewish History (3) (See History 484.)

Latin American Studies (600)

251 Introduction to Latin American Studies (3) (See History 255.) (CC)

252 Introduction to Latin American Studies (3) (See History 256.) (CC)

303 Highlights of Brazilian Civilization (3) (See Portuguese 303.)

313 Peoples and Cultures of Mesoamerica (3) (See Anthropology 313.)

314 Peoples and Cultures of South America (3) (See Anthropology 316.)

315 Aspects of Luso-Brazilian Literature (3) (See Portuguese 315.)

319 Caribbean Cultures and Societies (3) (See Anthropology 319.)

326 Brazilian Cinema (3) (See Portuguese 326.)
COURSES OF INSTRUCTION

331 Introduction to Hispanic Culture (3) (See Spanish 331.)

333 Survey of Spanish-American Literature: 1700 to Present (3) (See Spanish 333.)

334 Survey of Hispanic Literatures: Beginnings-1700 (3) (See Spanish 334.)

360 History of Latin America (3) (See History 360.)

361 History of Latin America (3) (See History 361.)

373 Geography of South America (3) (See Geography 373.)

401 Cultural Plurality and Institutional Changes in Latin America (3) (See Spanish 401.)

402 Latin American Studies Seminar (3) (See Spanish 402.)

430 Contemporary Brazilian Studies (3) (See Portuguese 430.)

432 Special Topics in Literature and Culture of the Portuguese-speaking World (3) (See Portuguese 432.)

456 Latin American Government and Politics I (3) (See Political Science 456.)

460 History of Brazil (3) (See History 460.)

462 History of Mexico (3) (See History 462.)

465 Latin American Film and Culture (3) (See Spanish 465.)

475 Studies in Latin American History (3) (See History 475.)

479 Disenchanted Texts in Hispanic Literature (3) (See Spanish 479.)

491 Foreign Study (1-15)
Repeatability: May be repeated. Maximum 15 hours.

492 Off-Campus Study (1-15)
Repeatability: May be repeated. Maximum 15 hours.

493 Independent Study (1-15)
Repeatability: May be repeated. Maximum 15 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.
(CE) Prerequisite(s): English 102 or 118 or 132.

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)
Repeatability: 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.
Recommended Background: 9 hours of courses (300 or above) required for linguistics concentration.

425 Introduction to Descriptive Linguistics (3) (See French 425.)

426 Methods of Historical Linguistics (3) (See German 426.)

431 Topics in Hispanic Linguistics (3) (See Spanish 431.)

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)
Repeatability: May be repeated. Maximum 15 hours.

492 Off-Campus Study (1-15)
Repeatability: May be repeated. Maximum 15 hours.

493 Independent Study (1-15)
Repeatability: May be repeated. Maximum 15 hours.

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.
(RE) Prerequisite(s): Business Administration 331.
Registration Restriction(s): Majors in the College of Business Administration.

411 Logistics Analytical Methods I (3) Introduction to the principal analytical tools and models that are used in logistics. Application of the analytical tools to logistics problems. Use of these techniques to support negotiations in a global business world.
(RE) Prerequisite(s): 310.
Registration Restriction(s): Majors in the College of Business Administration.

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.
(RE) Prerequisite(s): 310.
(RE) Corequisite(s): 411.
Registration Restriction(s): Majors in the College of Business Administration.

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.
(RE) Prerequisite(s): 310.
(RE) Corequisite(s): 411.
Registration Restriction(s): Majors in the College of Business Administration.

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.
(RE) Prerequisite(s): 411.
Registration Restriction(s): Majors in the College of Business Administration.

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.
(RE) Prerequisite(s): 411.
Registration Restriction(s): Majors in the College of Business Administration.

492 Logistics Off-Campus Study (1-6)
Grading Restriction: Satisfactory/No Credit grading only.
Repeatability: May be repeated. Maximum 6 hours.
Registration Restriction(s): Logistics major.
Registration Permission: Consent of instructor.

493 Independent Study (1-6) Directed research on subject of mutual interest to student and staff member.
Repeatability: May be repeated. Maximum 6 hours.
Registration Restriction(s): Logistics major.
Registration Permission: Consent of instructor.

Management (625)

300 Organizational Management (3) The study of the theories of organizations and the practice of management within them.
(RE) Prerequisite(s): Business Administration 201.
Comment(s): Not for majors in the College of Business Administration.
Registration Restriction(s): Minimum student level – junior.

331 Developing Managerial Skills (3) Focuses on developing the skills to manage the dynamics of organizational behavior including motivating others, decision-making, using power and influence, resolving conflict, building teams, and leading change.
(RE) Prerequisite(s): Business Administration 331 or Business Administration 341.
Registration Restriction(s): Majors in the College of Business Administration.

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.
(RE) Prerequisite(s): Business Administration 353 and Business Law 301.
Comment(s): For seniors.
Registration Restriction(s): Majors in the College of Business Administration.
402 International Business Strategy (3) Provides an understanding of how to design and implement business and corporate strategies that will achieve sustainable competitive advantage in the international arena. Its perspective is that of the general manager who, to be successful, must balance the demands of multiple stakeholders and integrate various organizational activities and business functions into a cohesive unit. Emphasis is placed on the practical application of concepts and theories to real business situations.

Credit Restriction: Students may not receive credit for Management 401 and 402.

(RE) Prerequisite(s): Business Administration 353 and Business Law 301.
Comment(s): Students must be in the international business collateral or dual concentration.
Registration Restriction(s): Majors in the College of Business Administration.

407 Honors: International Business Strategy (3) Provides an understanding of how to design and implement business and corporate strategies that will achieve sustainable competitive advantage in the international arena. Its perspective is that of the general manager who, to be successful, must balance the demands of multiple stakeholders and integrate various organizational activities and business functions into a cohesive unit. Emphasis is placed on the practical application of concepts and theories to real business situations.

(RE) Prerequisite(s): Business Administration 353 and Business Law 301.
Comment(s): Admission to the College of Business Administration’s Global Leadership Scholars Program is required.

431 Personnel Management (3) Theory, methods, and issues pertaining to successful personnel management. Strategic human resource management, human resource planning, job analysis, legal issues, recruiting, measurement/decision-making issues, assessing job candidates, human resource development, performance appraisal, compensation development, safety and health, labor relations, and organizational exit.

(RE) Prerequisite(s): 331.
Registration Restriction(s): Majors in the College of Business Administration.

440 Organizational Psychology (3) (See Psychology 440.)

451 Business Planning (3) Integration of various functional disciplines and their application to general management of new ventures within established companies and entrepreneurial enterprises. Focuses on the components necessary for the development of a business plan.

(RE) Corequisite(s): 431.
Registration Restriction(s): Majors in the College of Business Administration.

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.

(RE) Prerequisite(s): Business Administration 201.
Comment(s): For students in language and world business concentration in the College of Arts and Sciences (not for majors in the College of Business Administration).

492 Management Off-Campus Study (1-6)
Grading Restriction: Satisfactory/No Credit grading only.
Repeatability: May be repeated. Maximum 12 hours.
Registration Restriction(s): Management major.
Registration Permission: Consent of instructor.

493 Independent Study (3) Readings, research, and special projects.
Repeatability: May be repeated. Maximum 6 hours.
Registration Restriction(s): Management major.
Registration Permission: Consent of instructor.

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.

(RE) Prerequisite(s): Business Administration 201.
Comment(s): Not for majors in the College of Business Administration.
Registration Restriction(s): Minimum student level – junior.

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 translational customer learning into marketing strategy.

(RE) Prerequisite(s): Business Administration 332.
Registration Restriction(s): Majors in the College of Business Administration.

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.

(RE) Prerequisite(s): Business Administration 332.
(RE) Corequisite(s): 340.
Registration Restriction(s): Majors in the College of Business Administration.

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.

(RE) Prerequisite(s): 340.
(DE) Prerequisite(s): 345 for marketing majors.

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 service management include service design, service delivery, service quality/productivity, service failure/recovery, and role of technology.

(RE) Prerequisite(s): 340.
(DE) Prerequisite or (DE) Corequisite: 350 for marketing majors and co-concentration students.
Registration Restriction(s): Majors in the College of Business Administration.

456 Integrated Marketing Communications Management (2) Examines how organizations communicate value to customers through face-to-face selling. Focuses on the techniques 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.

(RE) Prerequisite(s): 340.
(DE) Prerequisite or (DE) Corequisite: 350 for marketing majors and co-concentration students.
Registration Restriction(s): Majors in the College of Business Administration.

458 Sales Force Management (2) Examines how organizations communicate value to customers through face-to-face selling. Focuses on the techniques 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.

(RE) Prerequisite(s): 340.
(DE) Prerequisite or (DE) Corequisite: 350 for marketing majors and co-concentration students.
Registration Restriction(s): Majors in the College of Business Administration.

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 to global marketing strategies.

(RE) Prerequisite(s): 350.
(DE) Prerequisite(s): Any two of 452, 456, 458.
Registration Restriction(s): Majors in the College of Business Administration.

492 Marketing Off-Campus Study (1-6)
Grading Restriction: Satisfactory/No Credit grading only.
Repeatability: May be repeated. Maximum 12 hours.
Registration Restriction(s): Marketing major.
Registration Permission: Consent of instructor.

493 Independent Study (1-6) Directed research on subjects of mutual interest to student and staff member.
Repeatability: May be repeated. Maximum 6 hours.
Registration Restriction(s): Marketing major.
Registration Permission: Consent of instructor.

Materials Science and Engineering (638)

101 Advances in Materials Science and Engineering (1) Review of modern advances in materials science and engineering. Exposes students to a variety of materials science and engineering case studies to demonstrate the societal impact of the materials science and engineering profession.
Grading Restriction: 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.
(RE) Prerequisite(s): 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, finishes, and construction details to optimize properties needed for particular end uses.


300 Materials Laboratory Procedures (1) Demonstration of fundamental principles of materials science and engineering. Laboratory demonstrations and group projects.


336 Principles of Ceramic Materials (3) Characterization of ceramic materials as to their crystal structure and their mechanical, electrical, and optical properties. Ceramic fabrication processes from the initial green body fabrication through the firing state.


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, Schrodinger’s equation, energy bands in crystals, electrical conduction in metals and semiconductors, classical and quantum mechanical treatments of optical properties, and magnetic phenomena.

360 Principles of Ceramic Materials (3) Characterization of ceramic materials as to their crystal structure and their mechanical, electrical, and optical properties. Ceramic fabrication processes from the initial green body fabrication through the firing state.

370 Materials Processing (3) Application of fundamentals of mass and energy balances, mechanics, heat and mass transfer, and 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, mold- ing, extrusion, forging, powder processing, coating techniques, etc.) are studied as examples of processing technologies. Elementary ideas of process measurement and control.

390 Principles of Metallic Materials (3) Property control through composition, mechanical and thermal processing, ferrous and nonferrous alloys, and alloy selection.

405 Structural Characterization of Materials (4) X-ray diffraction and fluorescence, and transmission electron microscopy, and 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, and plastic strain constitutive equations. Forming operations and limit criteria.

425 Welding Metallurgy (3) Welding processes; physical metallurgy of welding; phase transformations; heat flow; residual stresses; theories of hot cracking, cold cracking and porosity formation; applications to process utilization.


432 Defects in Crystals (3) Analytical and experimental analysis of defect interactions in solids.

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 polymer material properties and morphology. Supporting instrumentation includes linear viscoelastic rheometry, capillary viscometry, SEM, OM, FTIR, etc.

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. Recommended for chemical engineering, mechanical engineering, and civil engineering majors.

472 Fundamental Principles of Composite Materials (3) Physical principles basic to the design, manufacture, and application of fiber reinforced polymers, metals, and ceramics.

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 and tissue response to synthetic materials. (Same as Biomedical Engineering 474).


Registration Restriction(s): Minimum student level – junior.

484 Introduction to Maintainability Engineering (3) (See Nuclear Engineering 484.)

485 Advanced Biomaterials: Biological Application of Nanomaterials (3) 0-d, 1-d and 2-d nanomaterials synthesis and characterization with emphasis on surface properties. Chemical and biological functionalization of nanomaterials and nano-bio interfaces. Biological and biomedical application of nanomaterials. (Same as Biomedical Engineering 485.)

(OC) 486 Cell and Tissue-Biomaterials Interaction (3) Study of the fundamental principles involved in materials/cell and tissue interactions. Students will learn the underlying cellular and molecular mechanisms in host response to biomaterials. Emphasis will be placed on the integration of biomaterials/neuronal cell and tissue interactions into the design of neural implants (sensors, scaffolds, and therapeutics delivery modalities, etc.). (Same as Biomedical Engineering 486.)

(Re) 489 Materials Design (3) Design projects involving materials selection and performance.

Registration Restriction(s): Minimum student level – senior.

494 Special Project Laboratory (1-3) Group or individual investigation of problems related to materials science and engineering. Repeatability: May be repeated. Maximum 6 hours.

(Re) Prerequisite(s): 201.

495 Thesis (3) Research problems in materials science and engineering with prior approval of a professor. Repeatability: May be repeated. Maximum 6 hours.

Registration Restriction(s): Minimum student level – senior.

Registration Permission: Consent of instructor.

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. This course is designed to prepare students for enrollment in 119, 130, 201, and 202.

Grading Restriction: A, B, C, No Credit grading.

Credit Restriction: Does not count toward the total number of hours required for graduation, nor does it fulfill any mathematics requirement.

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). Individualized and computerized instruction on various pertinent algebra and trigonometry skills.

Grading Restriction: Satisfactory/No Credit grading only.

Repeatability: May be repeated. Maximum 3 hours.

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.

(OC) 115 Statistical Reasoning (3) An introduction to probability and statistics without calculus.

Credit Restriction: Not available for credit to students in the College of Business Administration.

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.

(OC) Recommended Background: ACT composite score 31 or SAT 1380.

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.

Grading Restriction: A, B, C, No Credit grading only.

Credit Restriction: 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.

Comment(s): Satisfactory placement test score required. This course should not be taken to remove an entrance requirement.

123 Finite Mathematics (3) For students not planning to major in the physical sciences, engineering, mathematics, or computer science. Exponential and logarithmic functions, interest and annuities, linear systems and matrices, optimization.

(QR) (DE) Prerequisite(s): 119 or 130 or satisfactory placement score.

Comment(s): Satisfactory placement test score required.

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.

(QR) Credit Restriction: Students who receive a grade of C or better in 141 or 152 may not subsequently receive credit for 125.

(De) Prerequisite(s): 119 or satisfactory placement test score.

130 Precalculus I (4) Review of algebraic, exponential, and trigonometric functions.

Grading Restriction: A, B, C, No Credit grading only.

Credit Restriction: Students who receive a grade of C or better in 141 or 151 may not subsequently receive credit for 130.

(De) Prerequisite(s): 119 or satisfactory placement test score.

Comment(s): For students who satisfy the course prerequisites for 141 or 151, but whose placement test scores indicate additional preparation is necessary. Students who did not study trigonometry in high school may take the non-credit course in trigonometry simultaneously with 130.

141 Calculus I (4) Single variable calculus especially for students of science, engineering, mathematics, and computer science. Differential calculus with applications.

(QR) Credit Restriction: Credit will not be given for both 141 and 141 or 152.

Comment(s): Satisfactory placement test score required. Students having 32 Mathematics ACT, 700 Quantitative SAT scores, or permission from the instructor may enroll in 141.

147 Honors: Calculus I (4) Honors version of 141 for well-prepared students.

(QR) Credit Restriction: Credit will not be given for both 147 and 141 or 152.

Comment(s): Satisfactory placement test score required. Students having 32 Mathematics ACT, 700 Quantitative SAT and credit for Mathematics 141, an AP Calculus score of 5, or permission of the instructor may enroll in 148.

151 Mathematics for the Life Sciences I (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.

(QR) Credit Restriction: Students who have a grade of C or better in 141 or 147 cannot subsequently receive credit for 151.

(Re) Prerequisite(s): 130 or satisfactory placement test score.

152 Mathematics for the Life Sciences II (3) Continuation of Math 151.

(QR) Credit Restriction: Students who have a grade of C or better in 141 cannot subsequently receive credit for 152.

(Re) Prerequisite(s): 130 or satisfactory placement test score.

171 Computer Literacy for Mathematics (3) Introduction to computers, the Internet, mathematical packages, and programming for prospective mathematics majors.

(OC) Credit Restriction: Students who have a grade of C or better in 141 cannot subsequently receive credit for 200.

(De) Prerequisite(s): 141.

200 Matrix Computations (1) Introduction to matrix calculations, including determinants, eigenvalues, and eigenvectors.

Credit Restriction: Students who have received a grade of C or better in 251 may not subsequently receive credit for 200.

Comment(s): For students in the College of Engineering and statistics majors in the College of Business Administration.

201 Structure of the Number System (3) Problem solving, sets and relations, number systems, integers, elementary number theory, rational numbers, and decimals.

Comment(s): Satisfactory placement test score required.


(QR) Comment(s): Satisfactory placement test score required.
231 Differential Equations (3) First course emphasizing solution techniques. Includes first-order equations and applications, theory of linear equations, equations with constant coefficients, Laplace transforms, and series solutions.
(RE) Prerequisite(s): 142 or 148.

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.
(RE) Prerequisite(s): 142 or 148.

247 Honors: Calculus III (4)
(RE) Prerequisite(s): 148.

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.
(RE) Prerequisite(s): 142 or 148.

257 Honors: Matrix Algebra I (3)
(RE) Prerequisite(s): 148.

299 Studies in Mathematics (1-3)
Repeatability: May be repeated. Maximum 9 hours.

300 Introduction to Abstract Mathematics (3) Algebra of sets, functions, relations, and mathematical induction. Algebraic structure of the real number system, order properties, and completeness.
(RE) Prerequisite(s): 142.

307 Honors: Introduction to Abstract Mathematics (3) Honors version of 300.
(RE) Prerequisite(s): 142. Registration Restriction(s): Mathematics majors only.
Comment(s): Honors students and well-prepared students from other majors may enroll with permission of the instructor.

309 Putnam Preparation Seminar (1) Problem-solving activities designed to prepare students for the annual Putnam Exam.
Grading Restriction: Satisfactory/No Credit grading only.
Repeatability: May be repeated. Maximum 4 hours.
Registration Permission: Permission of instructor.

(RE) Prerequisite(s): 300.
(DE) Prerequisite(s): 241 or 247.

341 Analysis I (3) Introduction to the theory of the real number system. Limits of sequences and functions of a real variable.
(RE) Prerequisite(s): 300.
(DE) Prerequisite(s): 241 or 247.

351 Algebra I (3) Introduction to abstract algebra emphasizing integers and polynomial rings.
(RE) Prerequisite(s): 300.
(DE) Prerequisite(s): 251 or 257.

Credit Restriction: Students may not receive credit for both Mathematics 371 and Computer Science 370.
(RE) Prerequisite(s): 231.
(DE) Prerequisite(s): 251 or 257 or 200 and 241 or 247.
Comment(s): Knowledge of high-level programming language required.

399 Studies in Mathematics (1-3)
Repeatability: 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. Includes at least one in-class essay examination and 3,000 words of writing outside the classroom. Writing-emphasis course.
(RE) Prerequisite(s): 300.
(DE) Prerequisite(s): 251 or 257.

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.
Credit Restriction: Does not satisfy requirements for the mathematics major.
(RE) Prerequisite(s): 231 and 241.
Comment(s): Knowledge of high-level programming language required.

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.
(RE) Prerequisite(s): 241 or 247.

405 Models in Biology (3) Difference and differential equation models of biological systems.
(DE) Prerequisite(s): 142 or 148 or 152.

411 Mathematical Modeling (3) Construction and analysis of mathematical models used in science and industry. Projects emphasized. Writing-emphasis course.
(RE) Prerequisite(s): 231 and 241.
(DE) Prerequisite(s): 251 or 257.

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.
(RE) Prerequisite(s): 323.

423 Probability (3) Axiomatic probability, univariate and multivariate distributions, conditional distributions and expectations, moment generating functions, laws of large numbers and central limit theorem.
(RE) Prerequisite(s): 323.

424 Stochastic Processes (3) Markov chains, Poisson processes and Brownian motion. Other topics as selected by instructor.
(RE) Prerequisite(s): 423.

425 Statistics (3) Standard statistical distributions, independence of mean and variance for a Gaussian sample, basic limit theorems; point and interval estimation, tests of statistical hypotheses, Neyman-Pearson theorem; likelihood ratio and other parametric and nonparametric tests.
(RE) Prerequisite(s): 423.

(RE) Prerequisite(s): 231.
(DE) Prerequisite(s): 200 or 251 or 257.

435 Partial Differential Equations (3) Separation of variables, Fourier series, solution of Laplace, wave, and heat equations.
(RE) Prerequisite(s): 231.
(DE) Prerequisite(s): 241 or 247.

443 Complex Variables (3) Introduction to the theory of functions of a complex variable, including residue theory and contour integrals.
(RE) Prerequisite(s): 241 or 247.

445 Advanced Calculus I (3) Introduction to the theory of sequences, series, differentiation, and Riemann integration of functions of one or more variables.
(RE) Prerequisite(s): 300.
(DE) Prerequisite(s): 241 or 247.

446 Advanced Calculus II (3) Continuation of 445.
(RE) Prerequisite(s): 445.

447 Honors: Advanced Calculus I (3) Honors version of 445.
(RE) Prerequisite(s): 341.

448 Honors: Advanced Calculus II (3) Continuation of 447.
(RE) Prerequisite(s): 447.

453 Matrix Algebra II (3) Advanced topics in matrix theory, including the Jordan canonical form.
(RE) Prerequisite(s): 251 or 257.

455 Abstract Algebra I (3) Introduction to algebraic structures such as groups, rings, fields, vector spaces, and linear transformations.
(RE) Prerequisite(s): 300.
(DE) Prerequisite(s): 251 or 257.

456 Abstract Algebra II (3) Continuation of 455.
(RE) Prerequisite(s): 455.

457 Honors: Abstract Algebra I (3) Honors version of 455.
(RE) Prerequisite(s): 351.

458 Honors: Abstract Algebra II (3) Continuation of 457.
(RE) Prerequisite(s): 457.

460 Geometry (3) Axiomatic and historical development of neutral, Euclidean, and hyperbolic geometry stressing proof technique and critical reasoning. Models of Non-Euclidean geometries.
(RE) Prerequisite(s): 300.

462 Differential Geometry (3) Classical differential geometry of curves and surfaces: Frenet frames, first and second fundamental forms, Gauss curvature and mean curvature, geodesics and parallel transport, the Gauss-Bonet theorem, geometry of the hyperbolic plane.
(RE) Prerequisite(s): 241.

467 Honors: Topology (3) Includes topology of line and plane, separation properties, compactness, connectedness, continuous functions, homeomorphisms, continua, and topological invariants.
(RE) Prerequisite(s): 300.
(DE) Prerequisite(s): 241 or 247.
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. (Same as Computer Science 471.)

(RE) Prerequisite(s): 371.


(RE) Prerequisite(s): 231.

475 Industrial Mathematics (3) Modeling, analysis, and computation applied to scientific/technical/industrial problems.

(RE) Prerequisite(s): 231.

Recommended Background: Familiarity with operating system and programming language.

490 Readings in Mathematics (1-3) Open to superior students. Independent study with faculty guidance.

Repeatability: May be repeated. Maximum 9 hours.

Comment(s): Consent of faculty member to supervise independent work required.

Registration Permission: Consent of department head.

497 Undergraduate Honors Seminar (2) Forum for presentation of student theses and other undergraduate research projects.

Grading Restriction: Satisfactory/No Credit grading only.

Repeatability: May be repeated. Maximum 9 hours.

Registration Restriction(s): Students in honors mathematics concentration only.

Comment(s): Other students may register with permission of the instructor.

498 Senior Honors Thesis (1-3) Students in the mathematics honors program work individually under the direction of a faculty member to write an honors thesis. The thesis must be approved by the departmental honors committee.

Repeatability: May be repeated. Maximum 6 hours.

499 Seminar in Mathematics (1-3) Topics vary. Requires out-of-class projects and in-class presentations by students. Students must register for the number of credit hours announced for a particular seminar.

Repeatability: May be repeated. Maximum 9 hours.

Registration Permission: Consent of instructor.

Mathematics Education (642)

485 Teaching of Mathematics, Grades 7-12 (3) Preparation of teaching plans, evaluation, and materials for teaching mathematics. Teaching simulation and directed observation in schools.

Registration Restriction(s): Qualification – admission to teacher education.

Mechanical Engineering (650)

202 Engineering Mechanics (2) Review of vector algebra. Statics of two-dimensional trusses and frames, including methods of joints and sections. Geometric properties of cross sections, including first and second moments of area, location of centroid. Inertial properties of rigid bodies, including moment of inertia and location of mass center.

(RE) Corequisite(s): Engineering Fundamentals 152 and Mathematics 142.


(RE) Prerequisite(s): 202 and Engineering Fundamentals 152.

321 Mechanics of Materials (3) Concepts of stress and strain; stress-strain relations; applications including axially loaded members, torsion of circular shafts, and bending of beams.

(RE) Prerequisite(s): 202 and Mathematics 142.


(RE) Corequisite(s): Mathematics 241.


(RE) Prerequisite(s): 331 and 391.

(DE) Prerequisite(s): Aerospace Engineering 341.

345 Mechanical Engineering Instrumentation and Measurement (3) Fundamentals of measurement systems. Standards, dynamic characteristics of instruments, and statistical data treatment. Transducers, signal conditioning, strain, pressure, and temperature and flow measurements.

(RE) Prerequisite(s): Aerospace Engineering 341 and Electrical and Computer Engineering 301.

(RE) Corequisite(s): 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.

(RE) Prerequisite(s): 231 and Mathematics 231.


(RE) Prerequisite(s): 231.

366 Manufacturing Processes (3) Processes related to design of machine parts. Casting, hot and cold forming, metal removal, and welding. Manufacturing tolerances and surface finishes.

(RE) Prerequisite(s): Materials Science and Engineering 201.

391 Engineering Analysis (3) Numerical and analytical techniques are developed for problems arising in mechanical and aerospace engineering. Numerical methods address root finding, direct and indirect techniques for linear and nonlinear systems, interpolation, curve fitting, quadratures, and solutions to ordinary- and partial-differential equations. Analytic methods include Fourier series, solutions to linear systems of differential equations, and separation of variables. Computer projects are assigned for reinforcing classroom developments.

(RE) Prerequisite(s): Engineering Fundamentals 152 and Mathematics 231.

(DE) Prerequisite(s): Mathematics 251 or 200 and Engineering Fundamentals 230.


(RE) Prerequisite(s): Electrical and Computer Engineering 305.

449 Mechanical Engineering Laboratory (3) Fundamentals of product development and project management. Evaluation of multiple technological products for business potential. Technological feasibility, marketing potential, and design and manufacturing requirements.

Registration Permission: Consent of instructor.

450 Readings in Mathematics (1-3) Topics relating to professional responsibility and communications, and organization. Requires a formal oral presentation by each student on an engineering topic chosen by the student and approved by the instructor. (OC)

(RE) Corequisite(s): 450.

Registration Restriction(s): Minimum student level – senior.

451 Control Systems (3) Analysis and design of feedback control systems using transient and frequency response techniques. Stability analysis in the time and frequency domain.

(RE) Prerequisite(s): 363.

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.

(RE) Prerequisite(s): 321 and 344.

(DE) Prerequisite(s): 363.

457 Engineering Entrepreneurship (3) Technology and innovation, technology transfer, and patent protection. Legal formation and intellectual property, knowledge management, generation, and transmission. Creating a business plan and a marketing plan, launching a technology-based business. Sources of capital, small business growth and operation.

Registration Permission: Consent of instructor.

460 Mechanical Engineering Design I (1-4) Design process, synthesis, and design studies.

Repeatable: Not repeatable for credit. May be taken once for 1-4 hours.

(RE) Corequisite(s): 465 or 475.

461 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.

Repeatable: Not repeatable for credit. May be taken once for 1-4 hours.

(RE) Prerequisite(s): 450.


(RE) Prerequisite(s): 363.
466 Elements of Machine Design II (3) Application of strength and properties of materials. Design factors and theories of failure to design of machine elements. Mini-design experiences.  
(Re) Prerequisite(s): 321 and Materials Science and Engineering 201.

467 Smart Structures and Materials (3) Fundamentals of electro-mechanical properties of ferroelectric materials (piezoelectric and electrostrictive), shape memory alloys, and other electrically and magnetically activated materials with application. Course includes a semester project.  
(Re) Prerequisite(s): 231 and 321.

475 Thermal Engineering (3) Thermal systems with emphasis on turbo-machinery, heat exchangers, gas-vapor mixtures, pyrometry, and fuels and combustion. Chemical equilibrium and system analysis and design.  
(Re) Prerequisite(s): 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. Powertrain design and analysis using various computer simulation tools.  
(Re) Corequisite(s): 475.

483 Introduction to Reliability Engineering (3) (See Nuclear Engineering 483.)

484 Introduction to Maintainability Engineering (3) (See Nuclear Engineering 484.)

494 Selected Topics in Mechanical Engineering (1–4) Problems and topics related to developments and practice in mechanical engineering.  
Repeatable: Not repeatable for credit. May be taken once for 1–4 hours.  
Registration Permission: Consent of instructor.

495 Selected Topics in Mechanical Engineering (1–4) Problems and topics related to developments and practice in mechanical engineering.  
Repeatable: Not repeatable for credit. May be taken once for 1–4 hours.  
Registration Permission: Consent of instructor.

Medieval Studies (674)

201 Medieval Civilization (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, and social and political history. Writing-emphasis course.  
(Cc)

202 Medieval Civilization (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, and 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’ 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. Writing-emphasis course.  
(Re) Prerequisite(s): 261.

312 Medieval History (3) (See History 312.)

313 Medieval History (3) (See History 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.  
Repeatable: May be repeated. Maximum 6 hours.

405 Medieval Literature (3) (See English 401.)

406 Chaucer (3) (See English 402.)

410 Medieval French Literature (3) (See French 410.)

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)  
Repeatable: May be repeated. Maximum 15 hours.

492 Off-Campus Study (1–15)  
Repeatable: May be repeated. Maximum 15 hours.

493 Independent Study (1–15)  
Repeatable: May be repeated. Maximum 15 hours.

Microbiology (684)

209 Global Medicine and Emerging Infectious Diseases (3) Investigation into the biology, microbiology, geography, economics, and politics of international health with an emphasis on emerging infectious diseases.  
Registration Restriction(s): Minimum student level – sophomore.

210 General Microbiology (3) General properties of bacteria and viruses, including physiology, metabolism, genetics of bacteria, replication and expression of viral genes, bacterial and viral pathogenicity, and mechanisms of resistance to disease.  
(Re) Prerequisite(s): Biology 140.  
(Re) Corequisite(s): Biology 240.

319 Introductory Microbiology Laboratory (2) Basic techniques for the examination, cultivation, and identification of microorganisms.  
(Re) Corequisite(s): 310.

320 Advanced Microbiology (3) Cell and molecular biology of microbes. Principles and applications in modern technological society. Intended for students in the microbiology concentration.  
(Re) Prerequisite(s): 310.

329 Advanced Microbiology Laboratory (2) Laboratory exercises designed to accompany 320.  
(Re) Prerequisite(s): 319.  
(Re) Corequisite(s): 320.

400 Laboratory Projects in Microbiology (2–4) Research projects under the direction of a faculty member.  
Grading Restriction: Satisfactory/No Credit grading only.  
Repeatable: May be repeated. Maximum 9 hours.  
Credit Restriction: May not be applied toward the major.  
Registration Permission: Consent of instructor.

401 Undergraduate Research in Microbiology (3) Research experience in laboratory of faculty member with faculty committee guidance.  
(De) Prerequisite(s): 310, 319, 320, and 329.  
Registration Restriction(s): Minimum student level – junior.  
Registration Permission: Consent of instructor and department head.

402 Advanced Undergraduate Research in Microbiology (4) Supervised research. May be taken to satisfy honors thesis.  
(De) Prerequisite(s): 401.  
Registration Restriction(s): Minimum student level – junior.  
Registration Permission: Consent of instructor and department head.

410 Microbial Physiology (3) Examination of concepts in microbial physiology and the structure and function of microbial cells.  
(De) Prerequisite(s): 310.  
(De) Corequisite(s): Biochemistry and Cellular and Molecular Biology 401.

(De) Prerequisite(s): 310.

420 Microbial Pathogenesis (3) A broad study of host-pathogen relationships including the biochemical, cellular, genetic, genomic and evolutionary factors which play a role in microbial pathogenesis.  
(De) Prerequisite(s): 310.

429 Medical Microbiology Laboratory (2) Laboratory exercises in medically important areas of microbiology including microorganisms, pathogenesis, and immunology.  
(Re) Prerequisite(s): 319 and 430.  
(Re) Corequisite(s): 420.

430 Immunology (3) Principles of inflammation and immunity, immunoglobulin structure, and theories of formation and diversity. Complement, hypersensitivities, cell cooperation and recognition in immune mechanisms; and soluble factors.  
(Re) Prerequisite(s): Biology 240.

440 Virology (3) Pathogenesis and molecular biology of viruses.  
(Re) Prerequisite(s): 310.
470 Microbial Ecology (3) Physiological diversity and taxonomy of microorganisms from natural and simulated ecosystems. Emphasis on the functional role of microorganisms in natural and simulated ecosystems.

(RE) Prerequisite(s): 310.

480 Genomics and Bioinformatics (3) Fundamentals of a new scientific discipline based on sequencing genomes (entire DNA) of individual organisms. Goals, principles, and types of genome analysis are covered in a traditional lecture format. Computational tools for genome analysis (bioinformatics) are presented in both lecture and hands-on (computer laboratory) settings.

Credit Restriction: Students may not receive credit for both 480 and 540. (RE) Prerequisite(s): Biology 240.

491 Foreign Study (1-9) Repeatability: May be repeated. Maximum 9 hours.

492 Off-Campus Study (1-9) Repeatability: May be repeated. Maximum 9 hours.

493 Independent Study (1-9) Repeatability: May be repeated. Maximum 9 hours.

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 are required. A capstone course.

Repeatability: May be repeated. Maximum 6 hours.

Credit Restriction(s): Maximum of 3 hours may be applied toward the major. (RE) Prerequisite(s): 320. Registration Restriction(s): Minimum student level – senior.

Military Science and Leadership (689)

101 Leadership and Personal Development (2) Introduces cadets to the personal challenges and competencies that are critical for effective leadership. Cadets learn how the personal development of life skills such as critical thinking, goal setting, time management, physical fitness, and stress management relate to leadership, officership, and the Army profession.

Grading Restriction: Letter grade only.

102 Introduction to Tactical Leadership (2) Overviews leadership fundamentals such as setting direction, problem-solving, listening, presenting briefs, providing feedback, and using effective writing skills. Cadets explore dimensions of leadership values, attributes, skills, and actions in the context of practical, hands-on, and interactive exercises.

Grading Restriction: 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.

Repeatability: May be repeated. Maximum 8 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 Innovative Team Leadership (3) Explores the dimensions of creative and innovative tactical leadership strategies and styles by examining team dynamics and two historical leadership theories that form the basis of the Army leadership framework (trait and behavior theories). Cadets practice aspects of personal motivation and team building in the context of planning, executing, and assessing team exercises and participating in leadership labs.

Grading Restriction: Letter grade only.

202 Foundations of Tactical Leadership (3) Examines the challenges of leading tactical teams in the complex contemporary operating environment (COE). The course highlights dimensions of terrain analysis, patrolling, and operation orders. Further study of the theoretical basis of the Army leadership framework explores the dynamics of adaptive leadership in the context of military operations.

Grading Restriction: Letter grade only.

301 Adaptive Tactical Leadership (4) Challenges cadets to study, practice, and evaluate adaptive leadership skills as they are presented with challenging scenarios related to squad tactical operations. Cadets receive systematic and specific feedback on their leadership attributes and actions. Based on such feedback, as well as their own self-evaluations, cadets continue to develop their leadership and critical thinking abilities.

Contact Hour Distribution: 3 hours and 1 lab.

Grading Restriction: Letter grade only. (RE) Prerequisite(s): 101 and 102. (DE) Prerequisite(s): 201, 202, or 200. Registration Restriction(s): 2.00 GPA.

302 Leadership in Changing Environments (4) Increasingly intense situational leadership challenges to build cadet awareness and skills in leading tactical operations up to platoon level. Cadets review aspects of combat, stability, and support operations. They also conduct military briefings and develop proficiency in garrison operation orders.

Grading Restriction: Letter grade only. (RE) Prerequisite(s): 301.

303 Leadership in Military History (3) Introduces learners to the American military experience and the development of the profession of arms. The importance of historical study is highlighted by noting personal and military examples of changes made as a result of lessons learned from history. Accounts from the major wars and battles throughout U.S. history are described with a focus on how leadership decisions affected the success or failure of military operations.

Grading Restriction: 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.

Grading Restriction: Letter grade only. (RE) Prerequisite(s): 301 and 302.

401 Developing Adaptive Leaders (4) Develops cadet proficiency in planning, executing, and assessing complex operations, functioning as a member of a staff, and providing performance feedback to subordinates. Cadets assess risk, make ethical decisions, and lead fellow ROTC cadets. Lessons on military justice and personnel processes prepare cadets to make the transition to Army officers.

Contact Hour Distribution: 3 hours and 1-hour lab.

Grading Restriction: Letter grade only. (RE) Prerequisite(s): 301 and 302.

402 Leadership in a Complex World (4) Explores the dynamics of leading in the complex situations of current military operations in the contemporary operating environment (COE). Cadets examine differences in customs and courtesies, military law, principles of war, and rules of engagement in the face of international terrorism. They also explore aspects of interacting with non-government organizations, civilians on the battlefield and host nation support.

Contact Hour Distribution: 3 hours and 1-hour lab.

Grading Restriction: Letter grade only. (RE) Prerequisite(s): 301 and 302. (DE) Prerequisite(s): 401.

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.

Grading Restriction: Letter grade only. Repeatability: May be repeated. Maximum 4 hours. Registration Permission: Consent of instructor.

Modern Foreign Languages and Literatures (686)

199 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 world business. See Director for further information.

482 Special Topics in Global Cinema (3) Content varies. Focus from global perspectives on directors, stars, film genres, national and regional cinema movements or other topics. Taught in English. Writing emphasis course. (Same as Cinema Studies 482; Global Studies 482.) Repeatability: May be repeated. Maximum 6 hours.

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.

Grading Restriction: Letter grade only. Repeatability: May be repeated. Maximum 3 hours.

Credit Restriction: May be taken as elective credit by any student except those registered for 310, 320.

201 Field Experience in General Music (1) Observing and assisting in an approved Academy or middle school classroom.

Grading Restriction: Satisfactory/No Credit grading only. Repeatability: May be repeated. Maximum 3 hours.

210 Class Woodwind Methods I (1) Structure, use, and 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.

Grading Restriction: Letter grade only.
211 Class Woodwind Methods II (1) Structure, use, and 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.

212 Class Woodwind Methods III (1) Structure, use, and 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.

220 Class Brass Methods (1) Structure, use, and 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.

221 Class Brass Methods II (1) Structure, use, and 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.

230 Class Percussion Methods I (1) Structure, use, and 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.

240 Class String Methods I (1) Structure, use, and 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.

241 Class String Methods II (1) Structure, use, and 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.

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, and simple accompaniments.

251 Functional Piano for Teachers II (1) Application of skills and techniques acquired in Music Education 250 to playing and transposing familiar school songs, choral accompaniments, and open scores. Creation of accompaniments for singing and movement exercises, listening activities, and playing instruments in various styles.

260 Eurhythmics (1) Principles and practice of eurhythmics as developed by Emile Jaques-Dalcroze.


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.

330 Music Methods for the Elementary School (3) Methods and materials for teaching music in the elementary grades.

340 General/Vocal Music Methods (3) School methods and materials for teaching music in the elementary, middle, and high schools.

341 String Orchestra Pedagogy and Rehearsal Techniques (2) Function, organization, and direction of a school marching band.

342 Internship II: Grades K-12 (3-6) Demonstration of professional competence in planning, instruction, and classroom management. Internship is completed in local public schools.

343 Special Topics in Music Education (1-3) As experienced in student teaching.

400 Student Teaching in Music (12) Full-time teaching practicum in an approved public school.

401 Senior Seminar (0) Issues related to the music teaching profession as experienced in student teaching.

410 Field Experience in Music Education (1) Repeatability: May be repeated. Maximum 3 hours.

420 Music Methods for the Junior High School and Middle School (3) Methods and materials for teaching vocal, instrumental, and general music at the junior high school or middle school level.

425 Internship III: Grades 7-12 (3-6) Internship is completed in an approved public school.

430 Music Methods for High School (3) Methods and materials for vocal and instrumental music at the high school level, including charting for the marching band. 

440 Marching Band Techniques (2) Functions, organization, and direction of a school marching band.

441 String Orchestra Pedagogy and Rehearsal Techniques (2) Function, organization, and direction of a school orchestra program.

482 Internship II: Grades K-12 (3-6) Demonstration of professional competence in planning, instruction, and classroom management. Internship is completed in local public schools.

490 Special Topics in Music Education (1-3) Repeatability: May be repeated. Maximum 9 hours.

493 Independent Study in Music Education (1-5) Repeatability: May be repeated. Maximum 9 hours.

Music Ensemble (708)

301 Woodwind Choir (1) Repeatability: May be repeated. Maximum 12 hours.

303 Small Jazz Ensemble (1) Repeatability: May be repeated. Maximum 12 hours.

304 Jazz Ensemble (1) Repeatability: May be repeated. Maximum 12 hours.

305 Studio Orchestra (1) Repeatability: May be repeated. Maximum 12 hours.

306 Trombone Choir (1) Repeatability: May be repeated. Maximum 12 hours.

309 Tuba Ensemble (1) Repeatability: May be repeated. Maximum 12 hours.

310 Percussion Ensemble (1) Repeatability: May be repeated. Maximum 12 hours.

311 Marimba Choir (1) Repeatability: May be repeated. Maximum 12 hours.
315 Chamber Music Ensemble (1)  
Repeatability: May be repeated. Maximum 14 hours.  
Comment(s): Audition or consent of instructor required.

320 UT Singers (1)  
Repeatability: May be repeated. Maximum 14 hours.  
Comment(s): Audition or consent of instructor required.

330 Chamber Singers (1)  
Repeatability: May be repeated. Maximum 14 hours.  
Comment(s): Audition or consent of instructor required.

340 Opera Theatre (1)  
Repeatability: May be repeated. Maximum 14 hours.  
Comment(s): Audition or consent of instructor required.

350 Concert Band (1)  
Repeatability: May be repeated. Maximum 14 hours.  
Comment(s): Audition or consent of instructor required.

352 Symphonic Band (1)  
Repeatability: May be repeated. Maximum 14 hours.  
Comment(s): Audition or consent of instructor required.

353 Wind Ensemble (1)  
Repeatability: May be repeated. Maximum 14 hours.  
Comment(s): Audition or consent of instructor required.

354 Pep Band (1)  
Repeatability: May be repeated. Maximum 14 hours.  
Comment(s): Audition or consent of instructor required.

359 Marching Band (1)  
Repeatability: May be repeated. Maximum 14 hours.  
Comment(s): Audition or consent of instructor required.

370 Symphony Orchestra (1)  
Repeatability: May be repeated. Maximum 14 hours.  
Comment(s): Audition or consent of instructor required.

380 Concert Choir (1)  
Repeatability: May be repeated. Maximum 14 hours.  
Comment(s): Audition or consent of instructor required.

383 Men's Chorale (1)  
Repeatability: May be repeated. Maximum 14 hours.  
Comment(s): Audition or consent of instructor required.

389 Women's Chorale (1)  
Repeatability: May be repeated. Maximum 14 hours.  
Comment(s): Audition or consent of instructor required.

399 Accompanying (1)  
Repeatability: May be repeated. Maximum 14 hours.  
Comment(s): Audition or consent of instructor required.

Music General (698)  
101 Fundamentals of Performance (1-2) Private instrumental or vocal study, one or two half lessons per week. This course is designed to prepare students for enrollment in Music Performance 103-195. Requires payment of applied music fees.  
Grading Restriction: A, B, C, No Credit grading.  
Repeatability: May be repeated. Maximum 12 hours.  
Credit Restriction: Cannot be used to satisfy applied music requirements at the principal level for the music major (Bachelor of Music or the Bachelor of Arts).  
Comment(s): Audition required.

200 Solo Class (0)  
Repeatability: May be repeated. Maximum 14 times.  
Grading Restriction: Satisfactory/No Credit grading only.

301 Junior Recital (0)  
Repeatability: Not repeatable.  
(Re) Corequisite(s): Music Theory 140.  
Recommended Background: 300-level (or above) music performance course.

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.  
Repeatability: May be repeated. Maximum 6 hours.  
Comment(s): For music majors only.

401 Senior Recital (0)  
Repeatability: Not repeatable.  
(Re) Corequisite(s): Music Theory 220 and Musicology 220.  
Recommended Background: 400-level music performance course.

411 Lecture Recital (0)  
Repeatability: Not repeatable.  
(Re) Corequisite(s): Music Theory 120 and Musicology 200.  
Recommended Background: 200-level (or above) music performance course.

421 Special Topics in Performance (1-3)  
Repeatability: May be repeated. Maximum 14 hours.  
Registration Permission: Consent of department head.

431 Special Topics in Pedagogy (1-3)  
Repeatability: May be repeated. Maximum 4 hours.  
Registration Permission: Consent of department head.

493 Independent Study (1-3)  
Repeatability: May be repeated. Maximum 30 hours.  
Registration Permission: Consent of instructor.

495 Sacred Music Internship (3) Observation, participation, and supervised leadership experience in the music program of an approved local church.  
Grading Restriction: Satisfactory/No Credit grading only.  
Registration Restriction(s): Bachelor of Music – music major/sacred music concentration; minimum student level – senior.

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.  
Registration Permission: 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.  
Registration Permission: Consent of instructor.

330 Percussion Literature and Pedagogy (3) Survey of percussion solo and ensemble literature, including instructional materials and methods. Application of pedagogical procedures to individual instruction and performance. Demonstration lessons by applied percussion faculty and class members.  
Registration Permission: Consent of instructor.

340 String Literature and Pedagogy I (3) Survey of string techniques, issues, research, and pedagogy. Topical presentations by the applied string faculty and guests.

(Re) Prerequisite(s): 340.  
Comment(s): 300-level (or above) music performance course required.

360 Orchestral Repertoire (1) An intensive weekly master class focused on the performance of standard orchestral repertoire used in most orchestral auditions.  
Repeatability: May be repeated. Maximum 12 hours.  
Recommended Background: 300-level (or above) music performance course required.  
Registration Permission: 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.  
(Re) Prerequisite(s): Music Education 320.

493 Independent Study (1-3)  
Repeatability: May be repeated. Maximum 30 hours.  
Registration Permission: Consent of instructor.

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.  
(Re) Prerequisite(s): 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.  
(Re) Prerequisite(s): 110.

130 Jazz Piano I (1) Harmonic language of jazz. Interpretation of chord symbols, formulae for voicing chords, chord progressions, and fundamental melody-playing and improvisation for right hand.

140 Jazz Piano II (1) Harmonic language of jazz. Interpretation of chord symbols, formulae for voicing chords, chord progressions, and construction of bass lines.  
(Re) Prerequisite(s): 130.
210 Jazz Improvisation I (2) Study of application and principles of improvisation, including nomenclature, chord progressions, chordscales, patterns, melodic development, and tune styles.
(RE) Prerequisite(s): 110.

220 Jazz Improvisation II (2) Study of application and principles of improvisation, including nomenclature, chord progressions, chordscales, patterns, melodic development, and solo transcription.
(RE) Prerequisite(s): 210.

310 Jazz Composition and Arranging (2) Composing and arranging in the jazz idiom.
Registration Permission: Consent of instructor.

320 Jazz Band Arranging (2) Arranging and scoring for the Big Jazz Band.
(REA) Prerequisite(s): Music Technology 340.

410 Advanced Improvisation (3) Development of individual skills and solving individual problems in jazz improvisation.
(REA) Prerequisite(s): 220.
Registration Restriction(s): Bachelor of Music – music major/ studio music and jazz concentration.

420 Jazz Pedagogy (1) Methods and materials relating to teaching of jazz, designing and administering jazz programs, and rehearsal techniques for jazz ensembles.
Registration Restriction: Bachelor of Music – music major/ studio music and jazz concentration.

493 Independent Study (1-3)
Repeatability: May be repeated. Maximum 30 hours.
Registration Permission: Consent of instructor.

Music Keyboard (712)

110 Class Piano I (1) Development of keyboard skills in keyboard reading, improvisation, harmonization, transposition, technique, and repertoire.
Registration Restriction: Bachelor of Music – music major or Bachelor of Arts – music major.

120 Class Piano II (1) Keyboard skills in reading two keyboard textures, improvisation, harmonization, transposition, technique, and accompanying programs.
(REA) Prerequisite(s): 110.

210 Class Piano III (1) Keyboard skills in reading hymn text, improvisation, harmonizing with secondary dominants, transposition, and accompanying programs for major instrument.
(REA) Prerequisite(s): 120.

220 Class Piano IV (1) Completes the piano competency requirement. Open score reading, 203 accompaniments for the major instrument.
(REA) Prerequisite(s): 210.

230 Keyboard Harmony (1) Melody harmonization, figured bass realization, and improvisation.
(REA) Prerequisite(s): Music Theory 120.

340 Piano Pedagogy I (3) Survey of elementary pedagogical methods and materials with emphasis on learning styles for motivation and reading both lead sheet and notation systems. Collaborative teaching experience.

350 Piano Pedagogy II (3) Survey of intermediate pedagogical materials and methods with emphasis on how to empower the student to play musically, to improvise, and to read in several keyboard textures. Collaborative teaching experience.
(REA) Prerequisite(s): 340.

360 Piano Pedagogy III (3) Intermediate to advanced methods and materials related to the development of principals of learning.
(REA) Prerequisite(s): 350.

370 Piano Pedagogy IV (3) Discussion of problems and experiences in teaching practice. Observation of teaching of all ages. Overview of the business aspects of private teaching.
(REA) Prerequisite(s): 360.

410 Organ Practicum (1) Improvisation, hymn playing, and accompanying on the organ.
Repeatability: May be repeated. Maximum 3 hours.
Recommended Background: Organ proficiency at the 200 level.

420 Piano Literature I (3) From 1750 to the middle 19th century.

430 Piano Literature II (3) Middle 19th century to the present.

460 The Organ and Its Literature I (3) Development of the organ and organ literature from the Middle Ages to approximately 1750. Problems of style and interpretation. Pedagogical literature and methods.
(REA) Prerequisite(s): Musicology 110.
Registration Permission: Consent of instructor.

470 The Organ and Its Literature II (3) Development of the organ and organ literature from 1750 to the present. Problems of style and interpretation. Pedagogical literature and methods.
(REA) Prerequisite(s): Musicology 110.

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.
Registration Permission: Consent of instructor.

485 Suzuki Piano Method I (2) Study of the philosophy, procedures, and literature of the Suzuki Piano Method Books 1 and 2.
Registration Permission: Consent of instructor.

490 Internship (2) Opportunity for pedagogy students to gain experience in teaching beginning students under the supervision of experienced instructors.
Contact Hour Distribution: Includes weekly discussion seminars.

491 Internship (2) Opportunity for pedagogy students to gain experience in teaching beginning students under the supervision of experienced instructors.
Contact Hour Distribution: Includes weekly discussion seminars.

493 Independent Study (1-3)
Repeatability: May be repeated. Maximum 30 hours.
Registration Permission: Consent of instructor.

495 Suzuki Piano Method II (2) Study of procedures and literature of the Suzuki Piano Method Books 3 and above.
(REA) Prerequisite(s): 485.

Music Performance (713)

103 Flute (1-3)
Repeatability: Not repeatable for credit. May be taken once for 1-3 hours.
(REA) Prerequisite(s): Music General 101.
(REA) Corequisite(s): Music General 200.
Comment(s): Requires audition and registration for ensemble appropriate to degree program.
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

104 Flute (1-3)
Repeatability: Not repeatable for credit. May be taken once for 1-3 hours.
(REA) Prerequisite(s): Music General 200.
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 103.
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

105 Oboe (1-3)
Repeatability: Not repeatable for credit. May be taken once for 1-3 hours.
(REA) Prerequisite(s): Music General 101.
(REA) Corequisite(s): Music General 200.
Comment(s): Requires audition and registration for ensemble appropriate to degree program.
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

106 Oboe (1-3)
Repeatability: Not repeatable for credit. May be taken once for 1-3 hours.
(REA) Prerequisite(s): 105.
(REA) Corequisite(s): Music General 200.
Comment(s): Requires audition and registration for ensemble appropriate to degree program.
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

110 Bassoon (1-3)
Repeatability: Not repeatable for credit. May be taken once for 1-3 hours.
(REA) Prerequisite(s): Music General 101.
(REA) Corequisite(s): Music General 200.
Comment(s): Requires audition and registration for ensemble appropriate to degree program.
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

111 Bassoon (1-3)
Repeatability: Not repeatable for credit. May be taken once for 1-3 hours.
(REA) Prerequisite(s): 110.
(REA) Corequisite(s): Music General 200.
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 110.
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.
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165 Viola (1-3)
Repeatability: Not repeatable for credit. May be taken once for 1-3 hours.
(DM) Prerequisite(s): Music General 101.
(RE) Corequisite(s): Music General 200.
Comment(s): Requires audition and registration for ensemble appropriate to degree program.
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

166 Viola (1-3)
Repeatability: Not repeatable for credit. May be taken once for 1-3 hours.
(RE) Prerequisite(s): 165.
(RE) Corequisite(s): Music General 200.
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 165.
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

170 Cello (1-3)
Repeatability: Not repeatable for credit. May be taken once for 1-3 hours.
(DM) Prerequisite(s): Music General 101.
(RE) Corequisite(s): Music General 200.
Comment(s): Requires audition and registration for ensemble appropriate to degree program.
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

171 Cello (1-3)
Repeatability: Not repeatable for credit. May be taken once for 1-3 hours.
(RE) Prerequisite(s): 170.
(RE) Corequisite(s): Music General 200.
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 170.
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

172 Electric Bass (1-3)
Repeatability: Not repeatable for credit. May be taken once for 1-3 hours.
(DM) Prerequisite(s): Music General 101.
(RE) Corequisite(s): Music General 200.
Comment(s): Requires audition and registration for ensemble appropriate to degree program.
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

173 Electric Bass (1-3)
Repeatability: Not repeatable for credit. May be taken once for 1-3 hours.
(RE) Prerequisite(s): 172.
(RE) Corequisite(s): Music General 200.
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 172.
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

174 String Bass (1-3)
Repeatability: Not repeatable for credit. May be taken once for 1-3 hours.
(DM) Prerequisite(s): Music General 101.
(RE) Corequisite(s): Music General 200.
Comment(s): Requires audition and registration for ensemble appropriate to degree program.
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

175 String Bass (1-3)
Repeatability: Not repeatable for credit. May be taken once for 1-3 hours.
(RE) Prerequisite(s): 174.
(RE) Corequisite(s): Music General 200.
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 174.
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

180 Piano (1-3)
Repeatability: Not repeatable for credit. May be taken once for 1-3 hours.
(DM) Prerequisite(s): Music General 101.
(RE) Corequisite(s): Music General 200.
Comment(s): Requires audition and registration for ensemble appropriate to degree program.

181 Piano (1-3)
Repeatability: Not repeatable for credit. May be taken once for 1-3 hours.
(RE) Prerequisite(s): 180.
(RE) Corequisite(s): Music General 200.
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 180.

182 Piano (1-3)
Repeatability: Not repeatable for credit. May be taken once for 1-3 hours.
(DM) Prerequisite(s): Music General 101.
(RE) Corequisite(s): Music General 200.
Comment(s): Requires audition and registration for ensemble appropriate to degree program.
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

183 Guitar (1-3)
Repeatability: Not repeatable for credit. May be taken once for 1-3 hours.
(DM) Prerequisite(s): Music General 101.
(RE) Corequisite(s): Music General 200.
Comment(s): Requires audition and registration for ensemble appropriate to degree program.
Registration Restriction(s): Bachelor of Music – music major/studio music and jazz concentration.

184 Guitar (1-3)
Repeatability: Not repeatable for credit. May be taken once for 1-3 hours.
(RE) Prerequisite(s): 183.
(RE) Corequisite(s): Music General 200.
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 183.
Registration Restriction(s): Bachelor of Music – music major/studio music and jazz concentration.

185 Harpsichord (1-3)
Repeatability: Not repeatable for credit. May be taken once for 1-3 hours.
(DM) Prerequisite(s): Music General 101.
(RE) Corequisite(s): Music General 200.
Comment(s): Requires audition and registration for ensemble appropriate to degree program.
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

186 Harpsichord (1-3)
Repeatability: Not repeatable for credit. May be taken once for 1-3 hours.
(RE) Prerequisite(s): 185.
(RE) Corequisite(s): Music General 200.
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 185.
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

189 Organ (1-3)
Repeatability: Not repeatable for credit. May be taken once for 1-3 hours.
(DM) Prerequisite(s): Music General 101.
(RE) Corequisite(s): Music General 200.
Comment(s): Requires audition and registration for ensemble appropriate to degree program.
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

190 Organ (1-3)
Repeatability: Not repeatable for credit. May be taken once for 1-3 hours.
(RE) Prerequisite(s): 189.
(RE) Corequisite(s): Music General 200.
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 189.
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

203 Flute (1-3)
Repeatability: May be repeated by non-BM students. Maximum 8 hours.
(RE) Prerequisite(s): 104.
(RE) Corequisite(s): Music General 200.
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 104.
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

204 Flute (1-3)
Repeatability: May be repeated by non-BM students. Maximum 8 hours.
(RE) Prerequisite(s): 203.
(RE) Corequisite(s): Music General 200.
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 203.
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

205 Oboe (1-3)
Repeatability: May be repeated by non-BM students. Maximum 8 hours.
(RE) Prerequisite(s): 106.
(RE) Corequisite(s): Music General 200.
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 106.
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

206 Oboe (1-3)
Repeatability: May be repeated by non-BM students. Maximum 8 hours.
(RE) Prerequisite(s): 205.
(RE) Corequisite(s): Music General 200.
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 205.
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.
210 Bassoon (1-3)  
Repeatability: May be repeated by non-BM students. Maximum 8 hours.  
(RE) Prerequisite(s): 111.  
(RE) Corequisite(s): Music General 200.  
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 111.  
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

211 Bassoon (1-3)  
Repeatability: May be repeated by non-BM students. Maximum 8 hours.  
(RE) Prerequisite(s): 210.  
(RE) Corequisite(s): Music General 200.  
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 210.  
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

215 Clarinet (1-3)  
Repeatability: May be repeated by non-BM students. Maximum 8 hours.  
(RE) Prerequisite(s): 116.  
(RE) Corequisite(s): Music General 200.  
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 116.  
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

216 Clarinet (1-3)  
Repeatability: May be repeated by non-BM students. Maximum 8 hours.  
(RE) Prerequisite(s): 215.  
(RE) Corequisite(s): Music General 200.  
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 215.  
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

220 Saxophone (1-3)  
Repeatability: May be repeated by non-BM students. Maximum 8 hours.  
(RE) Prerequisite(s): 121.  
(RE) Corequisite(s): Music General 200.  
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 121.  
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

221 Saxophone (1-3)  
Repeatability: May be repeated by non-BM students. Maximum 8 hours.  
(RE) Prerequisite(s): 220.  
(RE) Corequisite(s): Music General 200.  
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 220.  
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

225 Horn (1-3)  
Repeatability: May be repeated by non-BM students. Maximum 8 hours.  
(RE) Prerequisite(s): 126.  
(RE) Corequisite(s): Music General 200.  
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 126.  
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

226 Horn (1-3)  
Repeatability: May be repeated by non-BM students. Maximum 8 hours.  
(RE) Prerequisite(s): 225.  
(RE) Corequisite(s): Music General 200.  
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 225.  
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

230 Trumpet (1-3)  
Repeatability: May be repeated by non-BM students. Maximum 8 hours.  
(RE) Prerequisite(s): 131.  
(RE) Corequisite(s): Music General 200.  
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 131.  
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

231 Trumpet (1-3)  
Repeatability: May be repeated by non-BM students. Maximum 8 hours.  
(RE) Prerequisite(s): 230.  
(RE) Corequisite(s): Music General 200.  
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 230.  
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

235 Trombone (1-3)  
Repeatability: May be repeated by non-BM students. Maximum 8 hours.  
(RE) Prerequisite(s): 136.  
(RE) Corequisite(s): Music General 200.  
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 136.  
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

236 Trombone (1-3)  
Repeatability: May be repeated by non-BM students. Maximum 8 hours.  
(RE) Prerequisite(s): 235.  
(RE) Corequisite(s): Music General 200.  
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 235.  
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

240 Euphonium (1-3)  
Repeatability: May be repeated by non-BM students. Maximum 8 hours.  
(RE) Prerequisite(s): 141.  
(RE) Corequisite(s): Music General 200.  
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 141.  
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

241 Euphonium (1-3)  
Repeatability: May be repeated by non-BM students. Maximum 8 hours.  
(RE) Prerequisite(s): 240.  
(RE) Corequisite(s): Music General 200.  
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 240.  
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

245 Tuba (1-3)  
Repeatability: May be repeated by non-BM students. Maximum 8 hours.  
(RE) Prerequisite(s): 146.  
(RE) Corequisite(s): Music General 200.  
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 146.  
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

246 Tuba (1-3)  
Repeatability: May be repeated by non-BM students. Maximum 8 hours.  
(RE) Prerequisite(s): 245.  
(RE) Corequisite(s): Music General 200.  
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 245.  
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

250 Percussion (1-3)  
Repeatability: May be repeated by non-BM students. Maximum 8 hours.  
(RE) Prerequisite(s): 151.  
(RE) Corequisite(s): Music General 200.  
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 151.  
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

251 Percussion (1-3)  
Repeatability: May be repeated by non-BM students. Maximum 8 hours.  
(RE) Prerequisite(s): 250.  
(RE) Corequisite(s): Music General 200.  
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 250.  
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

255 Voice (1-3)  
Repeatability: May be repeated by non-BM students. Maximum 8 hours.  
(RE) Prerequisite(s): 156.  
(RE) Corequisite(s): Music General 200.  
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 156.  
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

256 Voice (1-3)  
Repeatability: May be repeated by non-BM students. Maximum 8 hours.  
(RE) Prerequisite(s): 255.  
(RE) Corequisite(s): Music General 200.  
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 255.  
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.
260 Violin (1-3)  
Repeatability: May be repeated by non-BM students. Maximum 8 hours.  
(RE) Prerequisite(s): 161.  
(RE) Corequisite(s): Music General 200.  
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 161.  
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

261 Violin (1-3)  
Repeatability: May be repeated by non-BM students. Maximum 8 hours.  
(RE) Prerequisite(s): 260.  
(RE) Corequisite(s): Music General 200.  
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 260.  
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

265 Viola (1-3)  
Repeatability: May be repeated by non-BM students. Maximum 8 hours.  
(RE) Prerequisite(s): 166.  
(RE) Corequisite(s): Music General 200.  
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 166.  
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

266 Viola (1-3)  
Repeatability: May be repeated by non-BM students. Maximum 8 hours.  
(RE) Prerequisite(s): 265.  
(RE) Corequisite(s): Music General 200.  
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 265.  
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

270 Cello (1-3)  
Repeatability: May be repeated by non-BM students. Maximum 8 hours.  
(RE) Prerequisite(s): 171.  
(RE) Corequisite(s): Music General 200.  
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 171.  
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

271 Cello (1-3)  
Repeatability: May be repeated by non-BM students. Maximum 8 hours.  
(RE) Prerequisite(s): 270.  
(RE) Corequisite(s): Music General 200.  
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 270.  
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

272 Electric Bass (1-3)  
Repeatability: May be repeated by non-BM students. Maximum 8 hours.  
(RE) Prerequisite(s): 173.  
(RE) Corequisite(s): Music General 200.  
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 173.  
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

273 Electric Bass (1-3)  
Repeatability: May be repeated by non-BM students. Maximum 8 hours.  
(RE) Prerequisite(s): 272.  
(RE) Corequisite(s): Music General 200.  
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 272.  
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

274 String Bass (1-3)  
Repeatability: May be repeated by non-BM students. Maximum 8 hours.  
(RE) Prerequisite(s): 175.  
(RE) Corequisite(s): Music General 200.  
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 175.  
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

275 String Bass (1-3)  
Repeatability: May be repeated by non-BM students. Maximum 8 hours.  
(RE) Prerequisite(s): 274.  
(RE) Corequisite(s): Music General 200.  
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 274.  
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

280 Piano (1-3)  
Repeatability: May be repeated by non-BM students. Maximum 8 hours.  
(RE) Prerequisite(s): 181.  
(RE) Corequisite(s): Music General 200.  
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 181.  
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

281 Piano (1-3)  
Repeatability: May be repeated by non-BM students. Maximum 8 hours.  
(RE) Prerequisite(s): 280.  
(RE) Corequisite(s): Music General 200.  
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 280.  
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

283 Guitar (1-3)  
Repeatability: May be repeated by non-BM students. Maximum 8 hours.  
(RE) Prerequisite(s): 184.  
(RE) Corequisite(s): Music General 200.  
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 184.  
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major or Bachelor of Arts – music major.

284 Guitar (1-3)  
Repeatability: May be repeated by non-BM students. Maximum 8 hours.  
(RE) Prerequisite(s): 283.  
(RE) Corequisite(s): Music General 200.  
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 283.  
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major or Bachelor of Arts – music major.

285 Harpsichord (1-3)  
Repeatability: May be repeated by non-BM students. Maximum 8 hours.  
(RE) Prerequisite(s): 185.  
(RE) Corequisite(s): Music General 200.  
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 185.  
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

286 Harpsichord (1-3)  
Repeatability: May be repeated by non-BM students. Maximum 8 hours.  
(RE) Prerequisite(s): 285.  
(RE) Corequisite(s): Music General 200.  
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 285.  
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

289 Organ (1-3)  
Repeatability: May be repeated by non-BM students. Maximum 8 hours.  
(RE) Prerequisite(s): 190.  
(RE) Corequisite(s): Music General 200.  
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 190.  
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

290 Organ (1-3)  
Repeatability: May be repeated by non-BM students. Maximum 8 hours.  
(RE) Prerequisite(s): 289.  
(RE) Corequisite(s): Music General 200.  
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 289.  
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

294 Composition (1-3)  
Repeatability: Not repeatable for credit. May be taken once for 1-3 hours.  
(RE) Prerequisite(s): Music Theory 210 and Music Theory 230.  
(RE) Corequisite(s): Music General 200.  
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in Music Theory 210 and Music Theory 230.  
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

295 Composition (1-3)  
Repeatability: Not repeatable for credit. May be taken once for 1-3 hours.  
(RE) Prerequisite(s): 294.  
(RE) Corequisite(s): Music General 200.  
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 294.  
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.
303 Flute (1-3)
Repeatability: May be repeated. Maximum 8 hours.
(RE) Prerequisite(s): 204.
(RE) Corequisite(s): Music General 200.
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 204.
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

304 Flute (1-3)
Repeatability: May be repeated. Maximum 8 hours.
(RE) Prerequisite(s): 303.
(RE) Corequisite(s): Music General 200.
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 303.
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

305 Oboe (1-3)
Repeatability: May be repeated. Maximum 8 hours.
(RE) Prerequisite(s): 206.
(RE) Corequisite(s): Music General 200.
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 206.
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

306 Oboe (1-3)
Repeatability: May be repeated. Maximum 8 hours.
(RE) Prerequisite(s): 305.
(RE) Corequisite(s): Music General 200.
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 305.
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

310 Bassoon (1-3)
Repeatability: May be repeated. Maximum 8 hours.
(RE) Prerequisite(s): 211.
(RE) Corequisite(s): Music General 200.
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 211.
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

311 Bassoon (1-3)
Repeatability: May be repeated. Maximum 8 hours.
(RE) Prerequisite(s): 310.
(RE) Corequisite(s): Music General 200.
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 310.
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

315 Clarinet (1-3)
Repeatability: May be repeated. Maximum 8 hours.
(RE) Prerequisite(s): 216.
(RE) Corequisite(s): Music General 200.
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 216.
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

316 Clarinet (1-3)
Repeatability: May be repeated. Maximum 8 hours.
(RE) Prerequisite(s): 315.
(RE) Corequisite(s): Music General 200.
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 315.
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

320 Saxophone (1-3)
Repeatability: May be repeated. Maximum 8 hours.
(RE) Prerequisite(s): 221.
(RE) Corequisite(s): Music General 200.
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 221.
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

321 Saxophone (1-3)
Repeatability: May be repeated. Maximum 8 hours.
(RE) Prerequisite(s): 320.
(RE) Corequisite(s): Music General 200.
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 320.
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

325 Horn (1-3)
Repeatability: May be repeated. Maximum 8 hours.
(RE) Prerequisite(s): 226.
(RE) Corequisite(s): Music General 200.
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 226.
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

326 Horn (1-3)
Repeatability: May be repeated. Maximum 8 hours.
(RE) Prerequisite(s): 325.
(RE) Corequisite(s): Music General 200.
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 325.
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

330 Trumpet (1-3)
Repeatability: May be repeated. Maximum 8 hours.
(RE) Prerequisite(s): 231.
(RE) Corequisite(s): Music General 200.
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 231.
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

331 Trumpet (1-3)
Repeatability: May be repeated. Maximum 8 hours.
(RE) Prerequisite(s): 330.
(RE) Corequisite(s): Music General 200.
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 330.
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

335 Trombone (1-3)
Repeatability: May be repeated. Maximum 8 hours.
(RE) Prerequisite(s): 236.
(RE) Corequisite(s): Music General 200.
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 236.
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

336 Trombone (1-3)
Repeatability: May be repeated. Maximum 8 hours.
(RE) Prerequisite(s): 335.
(RE) Corequisite(s): Music General 200.
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 335.
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

340 Euphonium (1-3)
Repeatability: May be repeated. Maximum 8 hours.
(RE) Prerequisite(s): 241.
(RE) Corequisite(s): Music General 200.
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 241.
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

341 Euphonium (1-3)
Repeatability: May be repeated. Maximum 8 hours.
(RE) Prerequisite(s): 340.
(RE) Corequisite(s): Music General 200.
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 340.
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

345 Tuba (1-3)
Repeatability: May be repeated. Maximum 8 hours.
(RE) Prerequisite(s): 246.
(RE) Corequisite(s): Music General 200.
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 246.
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

346 Tuba (1-3)
Repeatability: May be repeated. Maximum 8 hours.
(RE) Prerequisite(s): 345.
(RE) Corequisite(s): Music General 200.
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 345.
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.
COURSES OF INSTRUCTION

350 Percussion (1-3)
Repeatability: May be repeated. Maximum 8 hours.
(RE) Prerequisite(s): 251.
(RE) Corequisite(s): Music General 200.
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 251.
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

351 Percussion (1-3)
Repeatability: May be repeated. Maximum 8 hours.
(RE) Prerequisite(s): 350.
(RE) Corequisite(s): Music General 200.
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 350.
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

355 Voice (1-3)
Repeatability: May be repeated. Maximum 8 hours.
(RE) Prerequisite(s): 256.
(RE) Corequisite(s): Music General 200.
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 256.
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

356 Voice (1-3)
Repeatability: May be repeated. Maximum 8 hours.
(RE) Prerequisite(s): 355.
(RE) Corequisite(s): Music General 200.
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 355.
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

360 Violin (1-3)
Repeatability: May be repeated. Maximum 8 hours.
(RE) Prerequisite(s): 261.
(RE) Corequisite(s): Music General 200.
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 261.
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

361 Violin (1-3)
Repeatability: May be repeated. Maximum 8 hours.
(RE) Prerequisite(s): 360.
(RE) Corequisite(s): Music General 200.
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 360.
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

365 Viola (1-3)
Repeatability: May be repeated. Maximum 8 hours.
(RE) Prerequisite(s): 266.
(RE) Corequisite(s): Music General 200.
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 266.
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

366 Viola (1-3)
Repeatability: May be repeated. Maximum 8 hours.
(RE) Prerequisite(s): 365.
(RE) Corequisite(s): Music General 200.
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 365.
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

370 Cello (1-3)
Repeatability: May be repeated. Maximum 8 hours.
(RE) Prerequisite(s): 271.
(RE) Corequisite(s): Music General 200.
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 271.
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

371 Cello (1-3)
Repeatability: May be repeated. Maximum 8 hours.
(RE) Prerequisite(s): 370.
(RE) Corequisite(s): Music General 200.
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 370.
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

372 Electric Bass (1-3)
Repeatability: May be repeated. Maximum 8 hours.
(RE) Prerequisite(s): 273.
(RE) Corequisite(s): Music General 200.
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 273.
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

373 Electric Bass (1-3)
Repeatability: May be repeated. Maximum 8 hours.
(RE) Prerequisite(s): 372.
(RE) Corequisite(s): Music General 200.
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 372.
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

374 String Bass (1-3)
Repeatability: May be repeated. Maximum 8 hours.
(RE) Prerequisite(s): 275.
(RE) Corequisite(s): Music General 200.
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 275.
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

375 String Bass (1-3)
Repeatability: May be repeated. Maximum 8 hours.
(RE) Prerequisite(s): 374.
(RE) Corequisite(s): Music General 200.
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 374.
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

380 Piano (1-3)
Repeatability: May be repeated. Maximum 8 hours.
(RE) Prerequisite(s): 281.
(RE) Corequisite(s): Music General 200.
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 281.
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

381 Piano (1-3)
Repeatability: May be repeated. Maximum 8 hours.
(RE) Prerequisite(s): 380.
(RE) Corequisite(s): Music General 200.
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 380.

383 Guitar (1-3)
Repeatability: May be repeated. Maximum 8 hours.
(RE) Prerequisite(s): 284.
(RE) Corequisite(s): Music General 200.
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 284.
Registration Restriction(s): Bachelor of Music – music major/studio music and jazz concentration.

384 Guitar (1-3)
Repeatability: May be repeated. Maximum 8 hours.
(RE) Prerequisite(s): 383.
(RE) Corequisite(s): Music General 200.
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 383.
Registration Restriction(s): Bachelor of Music – music major/studio music and jazz concentration.

385 Harpsichord (1-3)
Repeatability: May be repeated. Maximum 8 hours.
(RE) Prerequisite(s): 286.
(RE) Corequisite(s): Music General 200.
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 286.
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

386 Harpsichord (1-3)
Repeatability: May be repeated. Maximum 8 hours.
(RE) Prerequisite(s): 385.
(RE) Corequisite(s): Music General 200.
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 385.
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>389 Organ (1-3)</td>
<td>Repeatability: May be repeated. Maximum 8 hours. (RE) Prerequisite(s): 290. (RE) Corequisite(s): Music General 200. Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 290. Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.</td>
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<tr>
<td>390 Organ (1-3)</td>
<td>Repeatability: May be repeated. Maximum 8 hours. (RE) Prerequisite(s): 389. (RE) Corequisite(s): Music General 200. Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 389. Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.</td>
</tr>
<tr>
<td>394 Composition (1-3)</td>
<td>Repeatability: May be repeated. Maximum 8 hours. (RE) Prerequisite(s): 295. (RE) Corequisite(s): Music General 200. Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 295. Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.</td>
</tr>
<tr>
<td>395 Composition (1-3)</td>
<td>Repeatability: May be repeated. Maximum 8 hours. (RE) Prerequisite(s): 394. (RE) Corequisite(s): Music General 200. Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 394. Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.</td>
</tr>
<tr>
<td>396 Composition with Electronic Media</td>
<td>Repeatability: May be repeated. Maximum 8 hours. (RE) Prerequisite(s): 336. (RE) Corequisite(s): Music Theory 210 and Music Theory 230. Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 336. Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.</td>
</tr>
<tr>
<td>403 Flute (1-3)</td>
<td>Repeatability: May be repeated. Maximum 8 hours. (RE) Prerequisite(s): 304. (RE) Corequisite(s): Music General 200. Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 304. Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.</td>
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<tr>
<td>404 Flute (1-3)</td>
<td>Repeatability: May be repeated. Maximum 8 hours. (RE) Prerequisite(s): 403. (RE) Corequisite(s): Music General 200. Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 403. Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.</td>
</tr>
<tr>
<td>405 Oboe (1-3)</td>
<td>Repeatability: May be repeated. Maximum 8 hours. (RE) Prerequisite(s): 306. (RE) Corequisite(s): Music General 200. Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 306. Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.</td>
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<tr>
<td>406 Oboe (1-3)</td>
<td>Repeatability: May be repeated. Maximum 8 hours. (RE) Prerequisite(s): 405. (RE) Corequisite(s): Music General 200. Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 405. Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.</td>
</tr>
<tr>
<td>410 Bassoon (1-3)</td>
<td>Repeatability: May be repeated. Maximum 8 hours. (RE) Prerequisite(s): 311. (RE) Corequisite(s): Music General 200. Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 311. Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.</td>
</tr>
<tr>
<td>411 Bassoon (1-3)</td>
<td>Repeatability: May be repeated. Maximum 8 hours. (RE) Prerequisite(s): 410. (RE) Corequisite(s): Music General 200. Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 410. Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.</td>
</tr>
<tr>
<td>415 Clarinet (1-3)</td>
<td>Repeatability: May be repeated. Maximum 8 hours. (RE) Prerequisite(s): 389. (RE) Corequisite(s): Music General 200. Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 316. Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.</td>
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<td>416 Clarinet (1-3)</td>
<td>Repeatability: May be repeated. Maximum 8 hours. (RE) Prerequisite(s): 415. (RE) Corequisite(s): Music General 200. Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 415. Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.</td>
</tr>
<tr>
<td>420 Saxophone (1-3)</td>
<td>Repeatability: May be repeated. Maximum 8 hours. (RE) Prerequisite(s): 321. (RE) Corequisite(s): Music General 200. Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 321. Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.</td>
</tr>
<tr>
<td>421 Saxophone (1-3)</td>
<td>Repeatability: May be repeated. Maximum 8 hours. (RE) Prerequisite(s): 420. (RE) Corequisite(s): Music General 200. Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 420. Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.</td>
</tr>
<tr>
<td>425 Horn (1-3)</td>
<td>Repeatability: May be repeated. Maximum 8 hours. (RE) Prerequisite(s): 326. (RE) Corequisite(s): Music General 200. Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 326. Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.</td>
</tr>
<tr>
<td>426 Horn (1-3)</td>
<td>Repeatability: May be repeated. Maximum 8 hours. (RE) Prerequisite(s): 425. (RE) Corequisite(s): Music General 200. Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 425. Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.</td>
</tr>
<tr>
<td>430 Trumpet (1-3)</td>
<td>Repeatability: May be repeated. Maximum 8 hours. (RE) Prerequisite(s): 331. (RE) Corequisite(s): Music General 200. Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 331. Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.</td>
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<td>431 Trumpet (1-3)</td>
<td>Repeatability: May be repeated. Maximum 8 hours. (RE) Prerequisite(s): 430. (RE) Corequisite(s): Music General 200. Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 430. Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.</td>
</tr>
<tr>
<td>435 Trombone (1-3)</td>
<td>Repeatability: May be repeated. Maximum 8 hours. (RE) Prerequisite(s): 336. (RE) Corequisite(s): Music General 200. Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 336. Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.</td>
</tr>
</tbody>
</table>
436 Trombone (1-3)
Repeatability: May be repeated. Maximum 8 hours.
(RE) Prerequisite(s): 435.
(RE) Corequisite(s): Music General 200.
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 435.
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

440 Euphonium (1-3)
Repeatability: May be repeated. Maximum 8 hours.
(RE) Prerequisite(s): 341.
(RE) Corequisite(s): Music General 200.
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 341.
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

441 Euphonium (1-3)
Repeatability: May be repeated. Maximum 8 hours.
(RE) Prerequisite(s): 440.
(RE) Corequisite(s): Music General 200.
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 440.
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

445 Tuba (1-3)
Repeatability: May be repeated. Maximum 8 hours.
(RE) Prerequisite(s): 346.
(RE) Corequisite(s): Music General 200.
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 346.
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

446 Tuba (1-3)
Repeatability: May be repeated. Maximum 8 hours.
(RE) Prerequisite(s): 445.
(RE) Corequisite(s): Music General 200.
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 445.
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

450 Percussion (1-3)
Repeatability: May be repeated. Maximum 8 hours.
(RE) Prerequisite(s): 351.
(RE) Corequisite(s): Music General 200.
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 351.
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

451 Percussion (1-3)
Repeatability: May be repeated. Maximum 8 hours.
(RE) Prerequisite(s): 450.
(RE) Corequisite(s): Music General 200.
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 450.
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

455 Voice (1-3)
Repeatability: May be repeated. Maximum 8 hours.
(RE) Prerequisite(s): 356.
(RE) Corequisite(s): Music General 200.
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 356.
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

456 Voice (1-3)
Repeatability: May be repeated. Maximum 8 hours.
(RE) Prerequisite(s): 455.
(RE) Corequisite(s): Music General 200.
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 455.
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

460 Violin (1-3)
Repeatability: May be repeated. Maximum 8 hours.
(RE) Prerequisite(s): 361.
(RE) Corequisite(s): Music General 200.
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 361.
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

461 Violin (1-3)
Repeatability: May be repeated. Maximum 8 hours.
(RE) Prerequisite(s): 460.
(RE) Corequisite(s): Music General 200.
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 460.
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

465 Viola (1-3)
Repeatability: May be repeated. Maximum 8 hours.
(RE) Prerequisite(s): 366.
(RE) Corequisite(s): Music General 200.
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 366.
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

466 Viola (1-3)
Repeatability: May be repeated. Maximum 8 hours.
(RE) Prerequisite(s): 465.
(RE) Corequisite(s): Music General 200.
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 465.
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

470 Cello (1-3)
Repeatability: May be repeated. Maximum 8 hours.
(RE) Prerequisite(s): 371.
(RE) Corequisite(s): Music General 200.
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 371.
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

471 Cello (1-3)
Repeatability: May be repeated. Maximum 8 hours.
(RE) Prerequisite(s): 470.
(RE) Corequisite(s): Music General 200.
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 470.
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

472 Electric Bass (1-3)
Repeatability: May be repeated. Maximum 8 hours.
(RE) Prerequisite(s): 373.
(RE) Corequisite(s): Music General 200.
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 373.
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

473 Electric Bass (1-3)
Repeatability: May be repeated. Maximum 8 hours.
(RE) Prerequisite(s): 472.
(RE) Corequisite(s): Music General 200.
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 472.
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

474 String Bass (1-3)
Repeatability: May be repeated. Maximum 8 hours.
(RE) Prerequisite(s): 375.
(RE) Corequisite(s): Music General 200.
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 375.
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

475 String Bass (1-3)
Repeatability: May be repeated. Maximum 8 hours.
(RE) Prerequisite(s): 474.
(RE) Corequisite(s): Music General 200.
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 474.
Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

480 Piano (1-3)
Repeatability: May be repeated. Maximum 8 hours.
(RE) Prerequisite(s): 381.
(RE) Corequisite(s): Music General 200.
Comment(s): Requires audition, registration for ensemble appropriate to degree program, and C or higher in 381.
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.

Registration Permission: 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.

(DE) Prerequisite(s): 290.

493 Independent Study (1-3)

Repeatability: May be repeated. Maximum 30 hours.

Registration Permission: Consent of instructor.

Music Theory (714)

100 Fundamentals of Music (3) Theory and practice of basic elements of music.

Comment(s): 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.

Registration Restriction(s): Bachelor of Music – music major or Bachelor of Arts – music major.

110 Theory I (3) Materials of music, including basic elements through non-chord tones and 6/4 chords. Exercises in analysis, composition, and improvisation of music with emphasis on common practice.

Recommended Background: Successful completion of music theory placement test.

120 Theory II (3) Materials of music through secondary dominants and modulation. Exercises in analysis, composition, and improvisation of music with emphasis on common practice.

(RE) Prerequisite(s): 110.

130 Ear Training I (1) Development of proficiency in sight singing short melodies and identifying melodic intervals, scales, triads, and the dictation of short diatonic melodic models.

Contact Hour Distribution: Includes lab hours.

Grading Restriction: A, B, C, No Credit grading.

(RE) Prerequisite(s): 230.

140 Ear Training II (1) Development of proficiency in sight singing longer melodies and identifying harmonic intervals, triads, cadence types, and the dictation of longer diatonic melodic models.

Contact Hour Distribution: Includes lab hours.

(RE) Prerequisite(s): 130.

210 Theory III (3) Materials of music through chromatic harmony and modulation. Exercises in analysis, composition, and improvisation of music with emphasis on common practice.

(RE) Prerequisite(s): 120.

220 Theory IV (3) Materials of music from the dissolution of functional harmony to contemporary compositional techniques. Exercises in analysis, composition, and improvisation of music.

(RE) Prerequisite(s): 210.


Contact Hour Distribution: Includes lab hours.

(RE) Prerequisite(s): 140.

240 Advanced Ear Training IV (1) Development of proficiency in sight singing melodies. Dictation of diatonic harmonic progressions and melodic models.

Contact Hour Distribution: Includes lab hours.

(RE) Prerequisite(s): 230.
310 Form and Analysis (3) Study and practice in analysis of forms of music from smallest structural units to large compound forms. 
(RE) Prerequisite(s): 210 and 240.

320 Instrumentation (2) Basic techniques in scoring for voice, brass, woodwind and string choirs, and percussion. 
(RE) Prerequisite(s): 210 and 230. 
Comment(s): For students in the studio music and jazz and music education concentrations.

Comment(s): Recommended as a review course for graduate students. 
Registration Permission: Consent of instructor.

410 Ear Training Review (1) Review and application of harmonic and melodic dictation skills. 
Grading Restriction: Satisfactory/No Credit grading only. 
Recommended Background: 240. 
Comment(s): For graduate and advanced undergraduate students. 
Registration Permission: Consent of instructor.

420 Orchestration (3) Advanced techniques in instrumental writing with emphasis on scoring for the concert orchestra. 
(RE) Prerequisite(s): 210 and 230. 
Comment(s): For students in the theory/composition concentration.

430 Counterpoint I (3) Study of species counterpoint in modal and tonal styles with emphasis on works of Palestrina and J.S. Bach. 
(RE) Prerequisite(s): 210 and 230.

440 Counterpoint II (3) Writing of contrapuntal forms of the 18th century and fugue analysis of works from the 18th through the 20th centuries. 
(RE) Prerequisite(s): 430.

450 Choral Arranging (2) Analysis of scores and writing of arrangements for choirs. 
(RE) Prerequisite(s): 210 and 240.

493 Independent Study in Music Theory (1-15) 
Repeatability: May be repeated. Maximum 15 hours. 
Registration Permission: Consent of department head.

Music Voice (715)

110 Class Voice I (1) Development of basic vocal skills. 
Repeatability: May be repeated. Maximum 2 hours. 
Registration Permission: Consent of instructor.

230 Acting for Singers (1) Advanced work on song presentation and interpretation; scene study and characterization. 
Repeatability: May be repeated. Maximum 4 hours. 
Registration Permission: Consent of instructor.


250 Diction II (2) Sounds by phonetic symbols. Opera and art songs used for examples. Emphasis placed on German, French, and Latin diction. Performance practice.

330 Opera Production (1-3) Supervised work on opera productions. 
Repeatability: May be repeated. Maximum 12 hours. 
Registration Permission: Consent of instructor.

410 Song Literature I (2) German songs.

420 Song Literature II (2) French, Italian, Russian, Scandinavian, Czechoslovakian, British, and American art songs.

Comment(s): For students in sacred music [voice] and music education/vocal concentrations.

450 Pedagogy I (2) Concepts and approaches to teaching singing, past and present, for all ages of voices. 
Registration Permission: Consent of instructor.

460 Pedagogy II (1) Vocal teaching materials. Includes collateral teaching experiences. 
(RE) Prerequisite(s): 450.

493 Independent Study (1-3) 
Repeatability: May be repeated. Maximum 30 hours. 
Registration Permission: Consent of instructor.

Musicology (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 artfully. Writing-emphasis course. 
(AH) 
Credit Restriction: Students who receive a grade of C or better in 210 may not receive credit for 110.

115 Music in the United States (3) Explores musical traditions of the United States. Writing-emphasis course. 
(AH)

120 History of Rock (3) Study and appreciation of rock music, its origins in blues and rock and roll, and 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. 
(AH)

200 Introduction to Music Literature (3) Basic forms of music and accepted masterworks through chronological approach. 
Comment(s): For music majors and minors only.

210 History of Western Music, Ancient to the Baroque (3) Historical study of musical styles, practices, theories, and context of European art music to 1750. Develops skills in independent research, critical thinking, and expository writing. Writing-emphasis course. 
(AH) (WC)

220 History of Western Music, Classical to the Present (3) Historical study of musical styles, practices, theories, and context of European art music from 1750 to present. Develops skills in independent research, critical thinking, and expository writing. Writing-emphasis course. 
(AH) 
Registration Permission: Consent of instructor.

290 Soundscapes: Exploring Music in a Changing World (3) An introduction to music within expressive culture and as a part of peoples' daily lives around the world. Focuses on music as sound, its role in concepts of identity, migration and global social processes, personal and community memory, and politics and power. 
(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 Africana Studies 310.)

330 Women in Music (3) Interdisciplinary survey of music as a gendered construct in varying cultural contexts, including western European art music, American popular music, and others. Explores gendered roles in composition, performance, and social and musical institutions from the point of view of historical, cultural, feminist, and queer interpretations. 
(Same as Women’s Studies 330.) 
(WC)

340 Contemporary Trends in American Church Music I (2) The history and analysis of popular, contemporary sacred music with an emphasis on theory and keyboard harmony. 
(RE) Prerequisite(s): Music Theory 220.

341 Contemporary Trends in American Church Music II (2) Continuation of the history and analysis of popular, contemporary sacred music with an emphasis on composition and arranging. 
(RE) Prerequisite(s): 340.

350 History of Jazz (3) Origin, development, and styles of jazz music and its exponents. Cultivation of special listening techniques. Writing-emphasis course.

380 Music in World Cultures (3) Examines music from an ethnomusicological perspective focusing on musical performance and the interrelationships of music, culture, and daily life. The course surveys music from a variety of cultures through a series of case studies. 
(WC) 
(RE) Prerequisite(s): 210 and 220.

400 Music History Survey (3) Condensed survey of the history of western European musical traditions from the medieval era to the present, including socio-political events that shape musical practice. Explores musical genres and styles, as well as key themes in musicological research. 
Recommended Background: 100-level musicology course. 
Comment(s): Recommended as a review course for graduate students. Does not count for graduate credit.

410 Studies in Genre (3) Historical, cultural, analytical, and musicological issues related to a single musical genre, style, or repertory. Topics vary. 
Repeatability: May be repeated. Maximum 6 hours. 
Recommended Background: 100-level musicology course.
420 History of Opera (3) The development of opera from its inception to the present. Readings and discussion focus on an understanding of the historical trajectory of opera, both as a musico-theatrical work and as a cultural practice. Recommended Background: 100-level musicology course. Registration Permission: Consent of instructor.

430 History of the Symphony (3) Overview of orchestral repertories from 1600 to the present. Recommended Background: 100-level musicology course. Registration Permission: Consent of instructor.

450 Composer Seminar (3) Biographical, historical, and cultural study of a composer or a group of related composers. Topics vary. Repeatability: May be repeated. Maximum 6 hours. Recommended Background: 100-level musicology course.

460 Music Aesthetics (3) Nature of music and musical experience, sense perception and emotions, music, and the role of artist in society. Aesthetic viewpoint of individuals and historical eras through selected writings. Writing-emphasis course. Recommended Background: 100-level musicology course.

480 Music in Christian Worship (3) Hymnody, liturgies, and liturgical music. Recommended Background: 100-level musicology course.

493 Independent Study (1-15) Repeatability: May be repeated. Maximum 15 hours. Registration Permission: Consent of department head.

Nuclear Engineering (716)

200 Introduction to Nuclear and Radiological Engineering (1) Topics related to nuclear and radiological engineering. Grading Restriction: Satisfactory/No Credit grading only.

203 Thermodynamics I (3) First law analysis of open and closed systems. Properties of ideal gases and real fluids. Introduction to second law and concept of entropy. 5.7.5.7 Rankine cycle. (RE) Prerequisite(s): Mathematics 142.

301 Fundamentals of Nuclear and Radiological Engineering (3) Nuclear systems, radiation interactions and decay, health physics, cross sections, basic nuclear reactor theory concepts, and introduction to FORTRAN programming. (RE) Prerequisite(s): Physics 232 and Mathematics 231.

304 Nuclear and Radiological Engineering Laboratory I (3) Radiation detection and counting instrumentation, counting statistics, half-life and decay schemes, gamma spectrometry, and heat transfer experiments. (WC) (DE) Prerequisite(s): 342. (RE) Corequisite(s): 470.


351 Nuclear System Dynamics and Control (3) System modeling and time-domain response, transfer functions, frequency-domain response, stability, state-space methods, and control design. Nuclear reactor kinetics, nodal modeling of core heat transfer, reactor control systems, and nuclear plant transient response are discussed. System simulation and control using PC-based software and toolboxes. (RE) Prerequisite(s): 301.

360 Reactor Systems and Safety (3) Safety and operating limits of nuclear steam supply system components. NRC regulations. Accident analysis and mitigation. (RE) Prerequisite(s): 342.

400 Senior Seminar (1) Current topics related to nuclear and radiological engineering including ethics, contemporary issues, and commitment to life-long learning. (OC) Grading Restriction: Satisfactory/No Credit grading only. Registration Restriction(s): Minimum student level – senior.

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. (WC) (RE) Prerequisite(s): 304.

404 Nuclear Fuel Cycle (3) Topics relative to nuclear fuel cycle including, mining, milling, fabrication, in-core management, reprocessing, waste disposal, Regulatory and radiation health issues and requirements. (RE) Prerequisite(s): 470.

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. (RE) Prerequisite(s): Physics 232.

421 Introduction to Nuclear Criticality Safety (3) Fundamentals of nuclear criticality safety. Criticality accidents and safety standards. Overview of experiments, computational methods, and applications. (RE) Prerequisite(s): 301.

431 Radiation Protection (3) External and internal dosimetry, biological effects of radiation, radiation detection, and radiation risk assessment. (RE) Prerequisite(s): 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. (RE) Prerequisite(s): 470.

483 Introduction to Reliability Engineering (3) Probabilistic failure models and parameter estimation (maximum likelihood, Bayes techniques). Model identification and comparison, accelerated life tests, failure prediction, system reliability, preventive maintenance, and warranties. (Same as Chemical Engineering 483; Industrial Engineering 483; Mechanical Engineering 483.) Registration Restriction(s): Minimum student level – senior.

484 Introduction to Maintainability Engineering (3) Principles of maintainence 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. (Same as Chemical Engineering 484; Industrial Engineering 484; Materials Science and Engineering 484; Mechanical Engineering 484.) Registration Restriction(s): Minimum student level – senior. Registration Permission: Consent of instructor.

485 Special Topics in Nuclear Engineering (3) Problems related to recent developments and practice. Repeatability: May be repeated. Maximum 6 hours. Registration Restriction(s): Minimum student level – senior. Registration Permission: Consent of instructor.

498 Research (1-3) Research related to recent developments in nuclear and radiological engineering. Grading Restriction: Satisfactory/No Credit grading only. Repeatability: May be repeated. Maximum 3 hours.

Nuclear Medicine Technology (718)

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. Comment(s): May not be substituted for Physics 471 or 472. Registration Restriction(s): Pre-professional programs major/nuclear medicine technology concentration.

411 Nuclear Instrumentation (3) Course concerns non-imaging, imaging, and instrument quality assurance. Non-imaging topics include basic radiation detectors, their applications, functions, and limitations with overview of basic electronics, gas-filled detectors, statistics and counting, and liquid scintillation detection systems, semiconductor and instrument stabilization, and quality control. Imaging topics are instrumentation of imaging detectors, including basic functioning and 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. Registration Restriction(s): Pre-professional programs major/nuclear medicine technology concentration.
412 Radiopharmacy (2) Emphasis on basic chemistry and 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.  
Registration Restriction(s): Pre-professional programs major/nuclear medicine technology concentration.

415 Physics for Nuclear Medicine II (3) Continuation of 410 with focus on radiobiology and radiation safety. Radiobiology topics include interactions of radiation and matter, cellular and systemic responses to radiation, early and late somatic and genetic effects, biological effects of low level radiation, critical organ and dose calculations, and benefit versus risk factor. Radiation safety topics include exposure terminology, dose limit recommendations, ALARA philosophy, federal and state regulations, radiation monitoring equipment, and methods and techniques for safe practice of nuclear medicine.  
Registration Restriction(s): Pre-professional programs major/nuclear medicine technology concentration.

420 Clinical Nuclear Medicine I (4) Theories and applications of nuclear medicine methodologies. Patient care, central nervous system, endocrine system, respiratory system, and digestive system.  
Registration Restriction(s): Pre-professional programs major/nuclear medicine technology concentration.

425 Computer Applications in Nuclear Medicine (3) Computer systems, applications, and components in utilization 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.  
Registration Restriction(s): Pre-professional programs major/nuclear medicine technology concentration.

430 Clinical Nuclear Medicine II (4) Theories and applications of nuclear medicine methodologies. Hepatic and hematopoyetic system, genitourinary system, musculoskeletal system, non-organ/tumor/inflammatory imaging, cardiovascular imaging, and non-imaging nuclear medicine.  
Registration Restriction(s): Pre-professional programs major/nuclear medicine technology concentration.

440 Clinical Nuclear Medicine III (4) Theories and applications of nuclear medicine methodologies. Single photon emission tomography, positron emission tomography, clinical quality assurance, pediatric nuclear medicine, radionuclide therapy, and management and administration of nuclear medicine programs.  
Registration Restriction(s): Pre-professional programs major/nuclear medicine technology concentration.

450 Clinical Practicum I (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.  
Registration Restriction(s): Pre-professional programs major/nuclear medicine technology concentration.

460 Clinical Practicum II (6) 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.  
Registration Restriction(s): Pre-professional programs major/nuclear medicine technology concentration.

470 Clinical Practicum III (6) 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.  
Registration Restriction(s): Pre-professional programs major/nuclear medicine technology concentration.

475 Nuclear Medicine Registry Review (2) Preparation for National Registry Examination with special emphasis on film interpretation and reporting in technical critique sessions.  
Registration Restriction(s): Pre-professional programs major/nuclear medicine technology concentration.
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 communication, delegation, and management of teams, conflicts, and change.

(Re) Prerequisite(s): 311 and 341.
Registration Restriction(s): Bachelor of Science in Nursing – nursing major.

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.

Contact Hour Distribution: 3 lecture and 2 lab.
(Re) Prerequisite(s): 311 and 319.
(De) Prerequisite(s): 333.
(Re) Corequisite(s): 351 and 361.
Registration Restriction(s): Bachelor of Science in Nursing – nursing major.

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.

Comment(s): Open to undergraduate students in all colleges.

402 Gerontology Practicum (3) Off-campus supervised experience in gerontology. Offered as part of the gerontology minor.

Comment(s): Open to students in all colleges.
Registration Permission: 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. (WC)

Contact Hour Distribution: 3 lecture and 2 lab.
(Re) Prerequisite(s): 361 and 382.
(De) Prerequisite(s) or Corequisite(s): 406.
Registration Restriction(s): Bachelor of Science in Nursing – nursing major.

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.

Contact Hour Distribution: 3 lecture and 2 lab.
(Re) Prerequisite(s): 361 and 382.
(De) Prerequisite(s) or Corequisite(s): 406.
Registration Restriction(s): Bachelor of Science in Nursing – nursing major.

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.

(Re) Prerequisite(s): 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.

Registration Restriction(s): Bachelor of Science in Nursing – nursing major or Master of Science in Nursing – nursing major; minimum student level – junior.

415 Nursing the Childbearing Family (4) Application of the nursing process to individuals, families, and groups in the childbearing/rearing stages of development. Clinical experiences are provided in a variety of hospital and community settings.

Contact Hour Distribution: 2 lecture and 2 lab.
Comment(s): For non-nurse MSN students.
Registration Restriction(s): Master of Science in Nursing – nursing major.

421 Mental Health Maintenance and Restoration (5) Nursing to support and care for persons with mental health needs. Emphasis on self as therapeutic agent with individuals, groups, and families. Developing nursing strategies for mental health maintenance and restoration.

Contact Hour Distribution: 3 lecture and 2 lab.
(Re) Prerequisite(s): 361 and 382.
(De) Prerequisite(s) or Corequisite(s): 406.
Registration Restriction(s): Bachelor of Science in Nursing – nursing major or Master of Science in Nursing – nursing major.

432 Health Promotion and Maintenance Strategies 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 and maintain health through the use of epidemiological processes. Clinical practice in a selected community health setting.

Contact Hour Distribution: 2 lecture and 1 lab.
Comment(s): For non-nurse MSN students only or permission of instructor.
Registration Restriction(s): Master of Science in Nursing – nursing major.

444 Care of Children, Adolescents, and their Families (3) 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.

Contact Hour Distribution: 2 lecture and 1 lab.
(Re) Prerequisite(s): 361.
Comment(s): For non-nurse MSN students only.
Registration Restriction(s): Master of Science in Nursing – nursing major.

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.

(Re) Prerequisite(s): 381.
Registration Restriction(s): Bachelor of Science in Nursing – nursing major; minimum student level – senior.

452 Professional and Workplace Issues (1) Focus on nursing ethics and moral development. Use of scenarios from everyday practice.

(Re) Prerequisite(s): 451.
Registration Restriction(s): Bachelor of Science in Nursing – nursing major; minimum student level – senior.

454 Professional Leadership Issues (2) 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)

Recommended Background: RN status or MSN.
Registration Restriction(s): Bachelor of Science in Nursing – nursing major or Master of Science in Nursing – nursing major.


Contact Hour Distribution: 2 lecture and 2 lab.
(Re) Prerequisite(s): 361 and 382.
(De) Prerequisite(s) or Corequisite(s): 406.
Registration Restriction(s): Bachelor of Science in Nursing – nursing major or Master of Science in Nursing – nursing major.

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.

Repeatability: May be repeated. Maximum 6 hours.
Registration Restriction(s): Bachelor of Science in Nursing – nursing major or Master of Science in Nursing – nursing major.
Registration Permission: Consent of instructor.

471 Nursing Research (3) Introduction to research, design, and methodologies. Critique of selected research studies for application to evidence-based nursing practice.

Comment(s): Also open to RNs.
Registration Restriction(s): Bachelor of Science in Nursing – nursing major; minimum student level – senior.

477 Honors Nursing Research (3) Introduction to research design and methodologies. Critique of nursing research studies for application to evidence-based nursing practice. Includes a substantial, scholarly senior project to be conducted with approval of an advisor within the department. Students in the Chancellor’s Honor Program are required to share their senior project in a public forum.

Registration Restriction(s): Nursing major; minimum student level – senior; qualification – admission to Chancellor’s Honors Program.

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.

Contact Hour Distribution: 1 lecture and 3 lab.
(Re) Prerequisite(s): 406 and 451.
(De) Prerequisite(s) or (De) Corequisite(s): 403, 404, 421, and 461.
Registration Restriction(s): Bachelor of Science in Nursing – nursing major.

491 International Studies (1-3) Participation in selected health and nursing care in foreign countries.

Repeatability: May be repeated. Maximum 6 hours.
Registration Restriction(s): Bachelor of Science in Nursing – nursing major or Master of Science in Nursing – nursing major.
Registration Permission: Consent of instructor.
NUTRITION (726)  
100 Introductory Nutrition (3) Nutritional concepts, current consumer issues in nutrition, nutritional needs through life cycle, and international nutrition concerns and/or issues. (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; and sorting out nutritional supplements.  
201 Careers in Nutrition (1) Overview of nutrition-related careers. Routes to meeting academic, registration, and experience requirements.  
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.  
(Re) Prerequisite(s): 100.  
303 Foodservice Systems Management (3) Assessment of managerial, organizational, and operational structures in foodservice systems with a focus on markets related to dietetic 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.  
(Re) Prerequisite(s): Chemistry 350 and Biochemistry and Cellular and Molecular Biology 310.  
314 Energy Metabolism and Metabolic Integration (3) Integration of carbohydrate, fat, and protein metabolism as applied to nutrient utilization and requirements in humans.  
(Re) Prerequisite(s): Biochemistry and Cellular and Molecular Biology 310 and Chemistry 350.  
Registration Restriction(s): Minimum student level – senior.  
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 and public policy.  
(Re) Prerequisite(s): 302 and 415.  
415 Clinical Nutrition I (3) Pathophysiological basis and nutritional assessment and intervention in chronic diseases in humans.  
(Re) Prerequisite(s): 313 and 314.  
416 Clinical Nutrition II (3) Pathophysiological basis and nutritional assessment and intervention in acute disease and other critical care conditions.  
(Re) Prerequisite(s): 415.  
420 Food and Nutritional Analysis (4) Principles, procedures, and instrumentation for analysis of food and body fluids. Interpretation of chemical, dietary, and anthropometric data analysis in nutrition research.  
(Re) Prerequisite(s): 100 and Biochemistry and Cellular and Molecular Biology 310.  
450 Special Topics: Nutrition (1-3) Developments, issues, and problems in nutrition. Topics will vary.  
Repeatable: May be repeated. Maximum 3 hours.  
Registration Restriction(s): Nutrition major; minimum student level – junior.  
Registration Permission: Consent of instructor.  
490 Introduction to the Dietetic Internship (3) Applications of clinical, food service, and management theories to dietetic practice.  
Comment(s): Restricted to dietetic intern students.  
492 Field Experience: Nutrition (1-3)  
Grading Restriction: Satisfactory/No Credit grading only.  
Repeatable: May be repeated. Maximum 6 hours.  
Registration Permission: Consent of instructor.  
493 Directed Study: Nutrition (1-3) Individual student/faculty experience.  
Grading Restriction: Letter grade only.  
Repeatable: May be repeated. Maximum 6 hours.  
Registration Permission: Consent of instructor.

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, and operational forecasting.  
(Re) Prerequisite(s): Business Administration 341.  
Registration Restriction(s): Majors in the College of Business Administration.  
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 queueing models.  
(Re) Prerequisite(s): 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.  
(Re) Prerequisite(s): Business Administration 341.  
Registration Restriction(s): Majors in the College of Business Administration.  
441 Operations Management II (3) Planning and control of operations systems. Aggregate planning, scheduling systems, and materials management.  
(Re) Prerequisite(s): 341.  
Registration Restriction(s): Majors in the College of Business Administration.  

Persian (744)  
161 Elementary Persian I (4) (See Asian Studies 161.)  
162 Elementary Persian II (4) (See Asian Studies 162.)  
261 Intermediate Persian I (4) (See Asian Studies 261.) (CC)  
262 Intermediate Persian II (4) (See Asian Studies 262.) (CC)  

Philosophy (745)  
110 The Human Condition: Values and Reality (3) The meaning of life, the existence of God, freedom of the will, and 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. Writing-emphasis course. (AH)  
Comment(s): May be taken before 110.  
117 Honors: Introduction to Philosophy I (3) Honors version of 110. (AH)  
118 Honors: Introduction to Philosophy II (3) Honors version of 111. (AH)  
Comment(s): May be taken before 117.  
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)  
Repeatable: May be repeated if topic differs. Maximum 6 hours.  
241 Engineering Ethics (3) Ethical issues in engineering at the intersection of science, business, and society. Topics such as international concerns; risk, safety, and the environment; employee loyalties and professional responsibility; and 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) (OC)  
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, and ethical business cultures. Readings include philosophical essays and contemporary case studies. Writing-emphasis course. (AH) (WC)
420 Topics in History of Philosophy (3) One or more figures or movements from antiquity through mid-20th century.  
Repeatability: May be repeated if topic differs. Maximum 9 hours.  
Recommended Background: 6 hours of philosophy courses.

435 Intermediate Formal Logic (3) Metaphysics of formal logic and philosophy of logic.  
(RE) Prerequisite(s): 135.

440 Contemporary Ethical Theory (3) Topics in meta-ethics or ethics.  
Repeatability: May be repeated if topic differs. Maximum 6 hours.  
(DE) Prerequisite(s): One of the following -- 241, 242, 243, 244, 245, 246, 340.

445 Advanced Environmental Ethics (3) Advanced topics in environmental ethics.  
Repeatability: May be repeated if topic differs. Maximum 6 hours.  
(DE) Prerequisite(s): One of the following -- 241, 242, 243, 244, 245, 246, 340.

446 Advanced Bioethics (3) Advanced topics in bioethics.  
Repeatability: May be repeated if topic differs. Maximum 6 hours.

460 Topics in Philosophy of Science (3)  
Repeatability: May be repeated if topic differs. Maximum 6 hours.  
Recommended Background: 6 hours of philosophy courses.

473 Philosophy of Mind (3) Problems of mind and body in relation to consciousness and personal identity.  
Recommended Background: 6 hours of philosophy courses.

480 Topics in Metaphysics and Epistemology (3)  
Repeatability: May be repeated if topic differs. Maximum 6 hours.  
Recommended Background: 6 hours of philosophy courses.

491 Foreign Study (1-15)  
Repeatability: May be repeated. Maximum 15 hours.

492 Off-Campus Study (1-15)  
Repeatability: May be repeated. Maximum 15 hours.

493 Independent Study (1-15)  
Repeatability: May be repeated. Maximum 15 hours.

Physical Education (764)

200 Special Topics (1-2) Selected topics in various activities not covered in the regular program.  
Repeatability: May be repeated if topic differs. 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.  
Grading Restriction: Satisfactory/No Credit grading only.

216 Martial Arts (Special Topics) (2) Selected topics in various forms of martial arts, including but not limited to judo, karate, and t'ai chi.  
Repeatability: May be repeated if topic differs. 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 (1) Pass, kill, ceiling shots, and basic serves. Singles and doubles strategy necessary for recreational play.
234 Soccer (1) Introduction to individual and team fundamentals, rules, and strategy.

235 Social Dance (2) Popular ballet dance forms such as the swing (shag), foxtrot, cha-cha, tango, and rumba.

236 Softball (1) Introduction to individual and team fundamentals, rules, and strategy.

237 Stress Management (2) Class will deal with the stress process and its relationship to health and disease, lifestyle, and the socio-cultural environment. The psychological, sociological, and spiritual aspects of stress will also be discussed, as well as the concept of the integrative (i.e., mind-body-spirit) person. Finally, a portion of each class period will be devoted to the learning, practice, and implementation of a personal, broad-based coping strategy for stress management.

239 Beginning Swimming (1) Includes skills in the American Red Cross basic swimming course for the non-swimmer.

240 Intermediate Swimming (1) Crawl stroke, elementary back stroke, side stroke, back crawl, breast stroke, entries, and turns.

244 Tennis I (2) Introduction to forehand, backhand, serve, volley, rules, scoring, and simple strategy.

245 Tennis II (1) Development of accuracy and improved technique of ground strokes and serve. Introduction to smash, spin serve, and advanced strategy.

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.

255 Water Safety Instructor (2) Prepares individuals to teach American Red Cross basic swimming and personal safety courses. ARC certification.

256 Lifeguarding Training (2) American Red Cross lifeguarding and aquatic management techniques. ARC certification.

259 Snow Skiing (1) Development of skills necessary to balance, walk, and slide while on skis. Ski etiquette and skier’s responsibility code.

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) Develops 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.

280 COURSES OF INSTRUCTION

Physics (773)

101 How Things Work I (3) Examines familiar objects of everyday experience and leads to an understanding of the physical principles that make them work. Laws of motion, mechanical objects, fluids, and heat. (NS) Comment(s): For students with majors outside science. Physics 101 is not a prerequisite for Physics 102.

102 How Things Work II (3) Examines familiar objects of everyday experience and leads to an understanding of the physical principles that make them work. Electric and magnetic forces, electronics, lights and optics, and an introduction to modern physics. (NS) Comment(s): For students with majors outside science. Physics 102 is not a prerequisite for Physics 103.

135 Introduction to Physics for Physical Science and Mathematics Majors I (4) Calculus-based physics of mechanics and waves. (NS) Contact Hour Distribution: 3 hours lecture and 2 hours lab. (RE) Corequisite(s): Mathematics 141. Comment(s): Alternative to 137 for physics majors.

136 Introduction to Physics for Physical Science and Mathematics Majors II (4) Calculus-based physics of thermodynamics, electricity, magnetism, and optics. (NS) Contact Hour Distribution: 3 hours lecture and 2 hours lab. (RE) Corequisite(s): Mathematics 142. Comment(s): Alternative to 138 for physics majors.


221 Elements of Physics (4) Basic physical principles and applications required in pre-medical, pre-dental, pre-pharmacy and pre-veterinary programs. Mechanics, heat, wave motion, and optics. (NS) Contact Hour Distribution: 3 hours lecture and 3 hours lab. (RE) Prerequisite(s): Mathematics 130 or Mathematics 141. Comment(s): Any calculus course is also an appropriate prerequisite.

222 Elements of Physics (4) Basic physical principles and applications required in pre-medical, pre-dental, pre-pharmacy and pre-veterinary programs. Electricity, magnetism, and modern physics. (NS) Contact Hour Distribution: 3 hours lecture and 3 hours lab. (RE) Prerequisite(s): 221.

231 Fundamentals of Physics: Electricity and Magnetism (3) For engineers and majors in mathematics and the physical sciences. Required of all engineering students. (NS) Contact Hour Distribution: 2 hours lecture and 3 hours lab/recitation. (RE) Corequisite(s): Mathematics 142.

232 Fundamentals of Physics: Wave Motion, Optics, and Modern Physics (4) Continuation of 231. Required of all engineering students. (NS) Contact Hour Distribution: 3 hours lecture and 3 hours lab/recitation. (RE) Prerequisite(s): 231. (RE) Corequisite(s): Mathematics 241.

250 Fundamentals of Physics: Modern Physics (4) Fundamental concepts of modern physics and their applications to atomic, nuclear, particle, and condensed matter physics, with lab. Credit Restriction: Students who have received credit for 240 may not receive credit for 250. (RE) Prerequisite(s): 136 or 138.

311 Mechanics (3) Kinematics and dynamics of single particle systems. Rotating referencing systems. (RE) Prerequisite(s): Computer Science 102. (DE) Prerequisite(s): 138 or 136 or 231.

312 Mechanics (3) Many body systems, rigid bodies, and Lagrangian and Hamiltonian mechanics. Strong emphasis on programming and numerical methods. (RE) Prerequisite(s): 311. (RE) Corequisite(s): Mathematics 241.

321 Thermal Physics (3) Concepts of temperature and heat. Laws of thermodynamics. Elementary statistical mechanics. Applications to physical and chemical problems. (DE) Prerequisite(s): 138 or 136 or 231 or 311.

341 Introduction to Nuclear Physics (3) Introductory theoretical nuclear physics with emphasis on applied aspects. Primarily for nuclear engineering majors. (RE) Prerequisite(s): 232 or 240.

342 Structure of Matter (3) Physics of molecules and condensed matter. (RE) Prerequisite(s): 240 or 232.

361 Electronics Laboratory (3) Electronic devices and instrumentation techniques in the physics laboratory. 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. Contact Hour Distribution: 6 hours lab per week. (DE) Prerequisite(s): 138 or 136 or 232.
362 Electronics Laboratory (3) Electronic devices and instrumentation techniques in the physics laboratory. Advanced instrumentation techniques applied to the study of electronic circuits as dynamic physical systems, feedback and stability, noise, discrete sampling, Fourier analysis and synthesis, and nonlinear circuit dynamics. Contact Hour Distribution: 6 hours lab per week. (DE) Prerequisite(s): 138 or 136 or 232.

380 Intermediate Physics I (3) Integrated topics in special relativity, classical mechanics, thermodynamics, statistical mechanics, electricity and magnetism, and quantum mechanics. (RE) Prerequisite(s): 250.

381 Intermediate Physics II (3) Integrated topics in special relativity, classical mechanics, thermodynamics, statistical mechanics, electricity and magnetism, and quantum mechanics. (RE) Prerequisite(s): 380.

382 Intermediate Physics III (3) Integrated topics in special relativity, classical mechanics, thermodynamics, statistical mechanics, electricity and magnetism, and quantum mechanics. (RE) Prerequisite(s): 381.

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 and quantum physics, and a final oral and written report on some independent study. Registration Restriction(s): Physics major; minimum student level – senior. Registration Permission: Consent of instructor.

411 Introduction to Quantum Mechanics (3) Fundamental principles of quantum mechanics and methods of calculation. Solution of the Schrodinger equation for simple systems. Application to atomic, molecular, nuclear, and condensed matter physics. (RE) Prerequisite(s): 240 and Mathematics 435.

412 Introduction to Quantum Mechanics (3) Fundamental principles of quantum mechanics and methods of calculation. Solution of the Schrodinger equation for simple systems. Application to atomic, molecular, nuclear, and condensed matter physics. (RE) Prerequisite(s): 411.

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. Contact Hour Distribution: 3 hours lecture and 3 hours lab. (DE) Prerequisite(s): 138 or 136 or 431 or 232. Registration Permission: Consent of instructor.

431 Electricity and Magnetism (3) Electrostatics, magnetostatics, and coupled electric and magnetic fields. Maxwell’s Equations, and electromagnetic waves and radiation. (DE) Prerequisite(s): 138 or 136 or 232.

432 Electricity and Magnetism (3) Electrostatics, magnetostatics, coupled electric and magnetic fields, Maxwell’s Equations, and electromagnetic waves and radiation. (RE) Prerequisite(s): 431.

441 Contemporary Physics I (3) An introduction to the major fields of contemporary physics – quantum mechanics, atomic and molecular physics, electromagnetic radiation, lasers, and quantum fluids. (RE) Prerequisite(s): 240 and 312. (DE) Prerequisite(s): 321.

442 Contemporary Physics II (3) An introduction to the major fields of contemporary physics – solid state physics, magnetism, nuclear physics, medical imaging, particle physics, and cosmology. (RE) Prerequisite(s): 441.

453 Team Research Project I (3) Student teams select the topic in consultation with the instructor and develop a plan for the project. Each team carries out the project with regular oral and written progress reports. Culuminating in a final report. (RE) Prerequisite(s): 361 and 461.

454 Team Research Project II (3) Student teams will carry out major experimental or computational projects that were planned and begun in 453. Regular oral and written progress reports culminate in a final report. (RE) Prerequisite(s): 453.

461 Modern Physics Laboratory (3) 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. Contact Hour Distribution: 6 hours lab per week. (RE) Prerequisite(s): 361. (DE) Prerequisite(s): 240 or 411.

462 Modern Physics Laboratory (3) Advanced experiments and experimental techniques in modern physics. Experimental team work. Thorough quantum mechanical interpretation of the results and preparation of scientific reports. Contact Hour Distribution: 6 hours lab per week. (RE) Prerequisite(s): 461.

490 Senior Seminar (1-3) Topics of current interest. Repeatability: May be repeated with consent of department. Maximum 6 hours.

491 Foreign Study (3-15) Repeatability: May be repeated. Maximum 15 hours.

492 Off-Campus Study (3-15) Repeatability: May be repeated. Maximum 15 hours.

493 Research and Independent Study (1-3) Research and study in field of particular interest with faculty guidance. Repeatability: May be repeated. Maximum 6 hours. Registration Permission: Consent of department.

Plant Sciences (791)

115 Plants for Health, Aesthetics, and Recreation (3) Introduction to the wide variety of plants used in society to enhance health, beautify surroundings and facilitate recreational activities. Exploration of how cultures value their trees, flowers, vegetables, fruits, herbs and grasses, with emphasis on landscaping, people/plant interactions, sports turf, organic gardening and nutrition.


220 Basic Landscape Plants (3) Identification, classification, adaptation, and culture and landscape design uses of basic ornamental trees, shrubs, and vines. Contact Hour Distribution: 2 hours and 1 lab.

226 Public Horticulture (3) 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.

230 Interior Plantscaping (3) History and introduction of the interior plantscape industry. Identification, culture, propagation, and use of plants for the commercial interior plantscape. Management of the interior environment including lighting, humidity, growing media, insects, and diseases. Commercial use of containers, planters, water features, and artificial plants.

240 Turfgrass Management (3) 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. Contact Hour Distribution: 2 hours lecture. Comment(s): Students in turfgrass science and management concentration must also register for 241.

241 Turfgrass Management Lab (1) Laboratory addressing topics presented in 240. Contact Hour Distribution: 2-hour lab. (RE) Corequisite(s): 240.

250 World Food and Fiber Plant Production (3) Introduction to important world crops and production systems. Emphasis on plant terminology, origin, distribution and use, world agro-ecosystems, environmental and economic sustainability, current technology in crop production.

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. Contact Hour Distribution: 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.

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.

328 Conservatories: Management, Operations, and Display (1) Study of the history, value, and role of public garden conservatories. Management, operations, and display of plants in controlled environments for research, conservation, and public education and entertainment.

329 Horticultural Interpretation: Educational Programming for Adults and Children (1) Strategic planning, programming, and budgeting for adult and youth education within a public garden.

330 Plant Propagation (2) Physiology, methodology, and environmental requirements for propagation.

331 Interpreting Research Findings (1) Basic statistical concepts required for understanding and evaluating research findings.

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, and carbon sequestration.

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.

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.

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.

353 Plant Biotechnology, Genetics and Breeding (3) Genetic principles and techniques used in plant modification. Principles of molecular and transmission genetics as applied to plant biotechnology and crop improvement.

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.

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.

380 Supplemental Landscape Design Graphics (3) Refinement of graphic skills. Sketches, elevations, sections, isometric projections, and perspectives. Lettering, plan graphics, color rendering, and other visual presentation media.

410 Nursery Management and Production (3) Management methods as applied to retail and wholesale nurseries and landscape contracting firms. Methods of producing liners, container and field-grown woody liners, containers and field-grown ornamental plants. (WC)

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.

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.

429 Field Study of Public Horticulture Institutions (2) Extended 10-12 day field study of various public horticulture institutions such as botanical gardens, arboretums, historical gardens, zoos, conservatories, cemeteries, and nature preserves. Application and travel fee required.


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.
442 Turf Root-zone Construction (2) Construction and management of root-zones for home lawns, golf courses, and athletic fields. (RE) Prerequisite(s): 240 and Biology 112.

446 Horticultural Therapy (3) Introduction to the application of horticulture as therapy for treatment, rehabilitation, and/or training of individuals with disabilities. (RE) Prerequisite(s): 210 and 226.

Registration Restriction(s): Minimum student level – senior.

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. (WC) (DE) Prerequisite(s): Communication Studies 210 or 240. Registration Restriction(s): Minimum student level – senior.

449 Advanced Turf Practicum (1-3) Experiences in active turf projects in the UT turfgrass sciences and management program under supervision of staff members. Student should make arrangements for practicum with a faculty mentor prior to enrollment. Repeatability: May be repeated. Maximum 3 hours.

(RE) Prerequisite(s): 240.

Registration Restriction(s): Minimum student level – junior.

Registration Permission: Consent of instructor.

450 Specialty Landscape Construction (3) Methods of design, materials, and construction techniques for specialized components of the landscape industry. Irrigation systems, outdoor lighting, garden ponds, and water features.

451 Plant Tissue Culture (3) (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, and genomic techniques.

Contact Hour Distribution: 1 hour lecture and one 3-hour lab. Credit Restriction: Students may not receive credit for both 454 and 554.

(Re) Prerequisite(s): 353 or Biology 240.

457 Weed Management (2) Principles of weed interference, integrated management, and herbicide selectivity and behavior. Specific recommendations for various crop and non-crop situations.

(Re) Prerequisite(s): Environmental and Soil Sciences 210.

458 Turf Weed Management Lab (1) Laboratory addressing practices and principles presented in 457 from the standpoint of turf.

(Re) Prerequisite(s): Environmental and Soil Sciences 210.

(Re) Corequisite(s): 457.

459 Agronomy Weed Management Lab (1) Laboratory addressing practices and principles presented in 457 from the standpoint of agronomy.

(Re) Prerequisite(s): Environmental and Soil Sciences 210.

(Re) Corequisite(s): 457.

460 Professional Practices in Landscape Construction and Management (3) Professionalism, salesmanship, proposals, bidding, estimating, specifications, and contract management in the landscape services industry. Computer technology applicable to landscape construction and contracting industry. Includes presentations by industry representatives.

(Re) Prerequisite(s): 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, and linear regression and correlation.

Credit Restriction: Students may not receive credit for both 461 and 561.

(Re) Prerequisite(s): Mathematics 125 or Mathematics 152.

465 Biofuel Crop Ecology (2) Studies of the fundamental ecological, biochemical, functional, and agronomic aspects of bioenergy feedstocks, in the context of three distinct systems: ethanol from simple sugars, ethanol from structural carbohydrates, and diesel from oil crops. Special attention will be given to current technological paradigms in biology and materials science, as well as considerations of tradeoffs in terms of domestic security and impacts on the domestic food supply and ecology.

(Re) Prerequisite(s): Biology 112.

469 Teaching Practicum (1-2) Supervised experience in teaching. May involve preparation of lectures and teaching aids, preparation and supervision of laboratory exercises, evaluation of student performance.

Repeatability: May be repeated. Maximum 2 hours.

Registration Restriction(s): Minimum student level – junior.

Registration Permission: Consent of instructor.


(Re) Prerequisite(s): 210.

(De) Prerequisite(s): 226 or 230 or 240.

Registration Restriction(s): Minimum student level – senior.

475 Professional Issues in Bioenergy (3) Study and discussion of professional issues and practices in the bioenergy field, including economics, policy, engineering, processing, agronomy, biotechnology.

Registration Restriction(s): Minimum student level – junior.

480 Advanced Landscape Design (4) 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.

Contact Hour Distribution: Two 3-hour labs.

(Re) Prerequisite(s): 280 and 380.

485 Computer Aided Landscape Design (3) Overview of Computer Aided Design (CAD) as it relates to landscape design and construction. Emphasis on development of landscape design drawings through utilization of LANDCAD software.

(Re) Prerequisite(s): 380 and Computer Science 100.

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.

Grading Restriction: Satisfactory/No Credit grading only.

Repeatability: May be repeated. Maximum 6 hours.

Registration Restriction(s): 2.25 GPA.

Registration Permission: Consent of instructor.

493 Problems in Horticultural and Plant Sciences (1-3) Supervised individual problems relating to the plant sciences or landscape design.

Repeatability: May be repeated. Maximum 6 hours.

Registration Permission: Consent of instructor.

494 Professional Horticultural Communications (3) Communication for public horticulturists through written, oral, and visual media. Emphasis on communication skills using written and oral skills, as well as grammar and visual techniques, and video use for educational and informational presentations in ornamental horticulture.

Registration Restriction(s): Minimum student level – senior.

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.

Repeatability: May be repeated. Maximum 6 hours.

(Re) Restriction(s): Restriction(s): 3.00 GPA.

Registration Permission: Consent of instructor.

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.

Comment(s): 3.25 GPA required for current students; 29 ACT composite or 1250 SAT composite required for incoming students.

300 Introduction to Political Philosophy (3) An introduction to the concepts, enduring questions, and significant thinkers associated with political philosophy with specific attention to differing conceptions of human nature, politics, the state, civic obligation and rights, freedom, justice, and democracy.

311 Contemporary Issues in American Public Policy (3) Selected public policy issues confronting the nation, including the background, nature, and effects of present policies, and options for the future. Writing-emphasis course.

312 Popular Culture and American Politics (3) Popular culture related to American politics and government focusing on the role of film, television, fiction, music, drama, art, and sports. Writing-emphasis course. (Same as American Studies 312; 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 50 states. Generalizations and comparisons with emphasis on federalism and intergovernmental relations.


330 Law in American Society (3) Law as a process through which social problems are addressed in the United States. Examples from case law, legislation, and administrative regulation. Writing-emphasis course.

340 Introduction to Public Administration and Public Policy (3) Public agencies, their organization, personnel, financial management, and administrative responsibility. The policy-making process and political environment.

341 Judicial Process and Policymaking (3) Courts as components of political systems and public policy-making through judicial decision-making.

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 democracies. 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 Junior Honors Seminar (3) Required of students in honors concentration. Registration Permission: Consent of department.

388 Junior Honors Seminar (3) Required of students in honors concentration. Registration Permission: 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.


410 Special Topics in Political Science (3) Repeatability: May be repeated. 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.

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.

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.

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 and Regulatory Policymaking (3) Legal and political dimensions of rulemaking, enforcement and adjudication by executive agencies.

445 Administration of Justice (3) Administration and processes of justice system, including judicial administration and decision making in trial and appellate courts.

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.

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 orientation of black African nations. Writing-emphasis course. (Same as Africana 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.

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 Marsilio of Padua. (Same as Medieval Studies 475.)

476 Modern Political Thought (3) Major western political thinkers from Machiavelli to Marx.

487 Senior Honors: Thesis and Seminar (3) Required of students in honors concentration. Registration Permission: Consent of department.

488 Senior Honors: Thesis and Seminar (3) Required of students in honors concentration. Registration Permission: Consent of department.

491 Foreign Study (1-15) Repeatability: May be repeated. Maximum 15 hours.

492 Off-Campus Study (1-15) Repeatability: May be repeated. Maximum 15 hours.

493 Independent Study (1-15) Repeatability: May be repeated. Maximum 15 hours.
494 Internship (1-6)
Grading Restriction: Satisfactory/No Credit grading only.
Repeatability: May be repeated. Maximum 6 hours.
Credit Restriction: May not be applied toward the political science major or minor.

499 Service Learning in Political Science (1) Provides framework for participation in service to community. Students assist classes at local schools or perform supervised service to local public service organizations or government institutions.
Grading Restriction: Satisfactory/No Credit grading only.
Repeatability: May be repeated. Maximum 3 hours.
Comment(s): Course can only be taken in conjunction with a section of an undergraduate political science course numbered 300 or above that is designated by instructor as having a service-learning component.
Registration Permission: Consent of department head.

Portuguese (811)
111 Elementary Portuguese (3) Introduction to Portuguese. Language laboratory required.

112 Elementary Portuguese (3) Introduction to Portuguese. Language laboratory required.
(RE) Prerequisite(s): 111.

211 Intermediate Portuguese (3) Stresses reading, writing, listening, and speaking of Portuguese to prepare for upper-division courses in the language. Language laboratory required. (CC)
(RE) Prerequisite(s): 112.

212 Intermediate Portuguese (3) Stresses reading, writing, listening, and speaking of Portuguese to prepare for upper-division courses in the language. Language laboratory required. (CC)
(RE) Prerequisite(s): 211.

301 Cultural Readings in Portuguese (3) Emphasis on key areas of the language, literature, and other cultural aspects of the Portuguese-speaking world. Taught in Portuguese.
Recommended Background: 212 or 400.

303 Highlights of Brazilian Civilization (3) Survey of Brazilian civilization with special attention to geographical features, historical events and popular culture. Topics may vary. Taught in Portuguese. Writing-emphasis course. (Same as Latin American Studies 303.)
Repeatability: May be repeated if content varies. Maximum 6 hours.
Recommended Background: 212 or 400.

309 Intermediate Conversation and Composition (3) Designed to improve proficiency in oral and written communication in Portuguese.
(RE) Prerequisite(s): 212 or 400.

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. Taught in English. Writing-emphasis course. (Same as Latin American Studies 315.)
Repeatability: May be repeated if topic differs. Maximum 6 hours.
Comment(s): Open to non-majors. Portuguese majors and minors will read texts and write papers in Portuguese.

326 Brazilian Cinema (3) A study of Brazilian cinema in light of political, cultural, and social contexts. Films and documentaries are shown in Portuguese with English subtitles. Topics may vary. Writing-emphasis course. (Same as Cinema Studies 326; Latin American Studies 326.)
Repeatability: May be repeated. Maximum 6 hours.
Comment(s): Open to non-majors. Majors will read texts and write papers in Portuguese.

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.
Recommended Background: 3 hours at the 300 level in another Romance language.

409 Advanced Conversation and Composition (3) Informal and structured conversation on contemporary topics (business, politics, economics, religion, culture) and formal writing practice at an advanced level.
Recommended Background: 3 hours at the 300 level in Portuguese.

430 Contemporary Brazilian Studies (3) Current Brazilian cultural, political and racial issues placed in a historical perspective with a comparative emphasis. Topics may vary. Writing-emphasis course. (Same as Latin American Studies 430.)
Repeatability: May be repeated. Maximum 12 hours.
Comment(s): Open to non-majors. Majors will write papers in Portuguese.

432 Topics in the Literature and Culture of the Portuguese-speaking World (3) Examination of the socio-political environment, literary works, and other important cultural practices of the Portuguese-speaking world. Topics may vary. Writing-emphasis course. (Same as Latin American Studies 432.)
Repeatability: May be repeated. Maximum 12 hours.

490 Internship (1-15) Career-related experiences in the United States or abroad.
Grading Restriction: Satisfactory/No Credit grading only.
Repeatability: May be repeated. Maximum 15 hours.
Registration Restriction(s): Language and world business (Portuguese) concentration.

491 Foreign Study (1-15)
Repeatability: May be repeated. Maximum 15 hours.

493 Independent Study (1-15)
Repeatability: May be repeated. Maximum 15 hours.
Registration Permission: Consent of instructor.

Psychology (830)
110 General Psychology (3) Introduction to primary approaches to the study of human behavior and experience. (SS)

117 Honors: General Psychology (3) (SS)
Recommended Background: Chancellor’s Honors Program participant.
Registration Permission: Consent of instructor.

210 Biological Basis of Behavior (3) Survey of theories and research concerning the role of genetic factors, nervous and endocrine systems, and other biological influences on behavior.
(RE) Prerequisite(s): 110 or 117.

220 Behavior and Experience: Humanistic Psychology (3) Behavioral and phenomenological analysis of individuals and their development in natural environments.
(RE) Prerequisite(s): 110 or 117.

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 a major in psychology.
(RE) Prerequisite(s): 110 or 117.

300 Child Psychology (3) The normal child from conception through infancy, childhood, and adolescence. Physical, cognitive, social, and emotional development.
(RE) Prerequisite(s): 110 or 117.

310 Learning and Thinking (3) Survey of theory and findings of research concerning both humans and non-humans.
(RE) Prerequisite(s): 110 or 117.

320 Motivation (3) Survey of theories and related research. Discussion of applications.
(RE) Prerequisite(s): 110 or 117.

(RE) Prerequisite(s): 110 or 117.

347 Honors Seminar (1) Classic works in psychology. Professional and ethical issues in psychology. Presentations of faculty scholarship and honors students' projects. Meets weekly.
Repeatability: May be repeated. Maximum 8 hours.
(RE) Prerequisite(s): 110 or 117.

360 Social Psychology (3) Theories, methods, and findings of research concerning individual behavior in a social context.
(RE) Prerequisite(s): 110 or 117.

367 Psychology Honors Project (3) Independent studies course which leads to the honors thesis. Student must have plan of study approved by mentor prior to enrollment.
Grading Restriction: Satisfactory/No Credit grading only.
Repeatability: May be repeated. Maximum 15 hours.
(RE) Prerequisite(s): 110 or 117.

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.
Repeatability: May be repeated. Maximum 9 hours.
Credit Restriction: Maximum of 6 hours may be applied toward major.
(RE) Prerequisite(s): 110 or 117.
385 Statistics in Psychology (3) Descriptive statistics. Logic of hypothesis-testing and statistical inference. Basic parametric and nonparametric tests.

(Re) Prerequisite(s): 110 or 117.

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.

(Re) Prerequisite(s): 385 or Mathematics 115.
Registration Restriction(s): Minimum student level – junior.

399 Supervised Research and Field Work (1-3) Field experience in community-based research and service settings.

Repeatability: May be repeated. Maximum 6 hours.
Credit Restriction: Any combination of 6 hours of 399, 489, 491, 492, 493 may be used in major. An additional 6 hours may be used as electives.
(Re) Prerequisite(s): 110 or 117.


(Re) Prerequisite(s): 110 or 117.
Registration Restriction(s): Minimum student level – junior.

409 Group Facilitation (3) Study of theory and technique through supervised experience in small groups.

Repeatability: May be repeated. Maximum 6 hours.
(Re) Prerequisite(s): 110 or 117.
Registration Restriction(s): Minimum student level – junior.

410 Sensory Processes and Perception (3) Physiological and psychological theories of perception. Emphasis on audition and vision.

(Re) Prerequisite(s): 110 or 117.
Registration Restriction(s): Minimum student level – junior.

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. (Same as Religious Studies 415.)

(Re) Prerequisite(s): 110 or 117.
Registration Restriction(s): Minimum student level – junior.

420 History and Systems of Psychology (3) History of psychological thought. Classical approaches and recent developments.

(Re) Prerequisite(s): 110 or 117.
Registration Restriction(s): Minimum student level – junior.

424 Psychology and the Law (3) Psychological aspects of legal systems.

(Re) Prerequisite(s): 110 or 117.
Registration Restriction(s): Minimum student level – junior.

430 Health Psychology (3) Psychological factors related to health and illness, including stress, personality, and environment. Applications of psychological treatments to physical illness.

(Re) Prerequisite(s): 110 or 117.
Registration Restriction(s): Minimum student level – junior.


434 Psychology of Gender (3) Biological, psychological, and social factors in gender. Importance of gender roles and stereotypes for behavior and experience. (Same as Women's Studies 434.)

(Re) Prerequisite(s): 110 or 117.
Registration Restriction(s): Minimum student level – junior.

435 Multicultural Psychology (3) Issues of race, ethnicity, socioeconomic status, gender, spirituality, sexual orientation, and ability level as related to the theory, research, and practice of psychology will be examined. Focus will be on increasing personal self-awareness and knowledge of multicultural issues.

(Re) Prerequisite(s): 110.

440 Organizational Psychology (3) Social-psychological analysis of organizations emphasizing role-theory and systems theory. (Same as Management 440.)

(Re) Prerequisite(s): 110 or 117.
Registration Restriction(s): Minimum student level – junior.


(Re) Prerequisite(s): 385 or Mathematics 115.
Registration Restriction(s): Minimum student level – junior.

450 Comparative Animal Behavior (3) (See Ecology and Evolutionary Biology 450.)
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.

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.


400 Special Topics (3) Topics vary.

430 Elementary and Middle School Developmental Reading Instruction (2) Word recognition (including phonics), comprehension, evaluation, and materials.

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)

100 Orientation to Recreation and Leisure Studies (1) Overview of discipline and professional areas for incoming recreation and leisure studies majors.

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.

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.

320 Therapeutic Recreation and Special Populations (3) Principles, concepts, historical development of recreation, therapeutic recreation, and leisure services for special population. Discussion and explanation of legislation, attitudes, barriers to participation, inclusion and advocacy as related to leisure fulfillment. Discussion of various disabilities, illnesses, and conditions that impact one's lifestyle.

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. Introduction to specific facilitation techniques, e.g. values clarification, etc., that may be applicable to therapeutic recreation.

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.

410 Management Concepts of Recreation, Leisure, and Sport Programs (3) Principles for operationalizing recreation and leisure and sport-related programs. Units address utilizing research as a management tool, assessing program cost, facility utilization and evaluation, and contemporary management concepts.

420 Principles of Therapeutic Recreation (3) Principles and practices in therapeutic recreation, including activity analysis, activity and program selection. Also, individual and program assessment, developing treatment plans, proper documentation and professional issues will be discussed.

425 Therapeutic Recreation Program (3) Principles and practices of therapeutic recreation programming for individuals with multiple disabilities. Focus is on the social, interpersonal, and behavioral aspects of working with children and young adults with disabilities in recreational environments.

430 Organization and Administration of Leisure Services (3) Principles of administration applied to provision of leisure services offered by public, private, non-profit, and/or commercial enterprises. Organizational structures, human resource management, diversity, evaluation, legal authority, introduction to budgeting and fiscal procedures, professional responsibility, and career management.

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.

450 Special Topics in Recreation and Leisure Studies (1-6) Development of special topics in recreation/therapeutic recreation and leisure.

Reading Education (847)

430 Elementary and Middle School Developmental Reading Instruction (2) Word recognition (including phonics), comprehension, evaluation, and materials.

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.

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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. Registration Restriction(s): 2.30 GPA.

480 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. Grading Restriction: Satisfactory/No Credit grading only. (RE) Prerequisite(s): 290 and 390. Registration Restriction(s): Recreation and leisure studies major; 2.50 GPA; minimum student level – senior.

493 Directed Independent Study in Recreation and Leisure Studies (1-3) Development of an independent study project under the direction of an appropriate faculty member in the Recreation and Leisure Studies Program. Independent study project must be approved by appropriate faculty member. Repeatability: May be repeated. Maximum 3 hours.

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)

107 Honors: 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)

232 Varieties of Religious Community (3) How different forms of religious communities (cults, tribes, sects, monastic orders, denominations, familial, etc.) have sought to reject, reinforce, transform, ignore, or dominate their culture and society. (Same as Sociology 232.)

244 Professional Responsibility (3) (See Philosophy 244.) (AH) (OC)

300 Ways of Understanding Religion (3) Sources and methods used in the study of religion and religions. Analysis of approaches to the study of religion. Writing-emphasis course.

301 Religious Myth, Symbol, and Ritual (3) Distinctive modes of religious expression and analysis of theoretical approaches appropriate to their particular social and cultural functions in religions.

302 Anthropology of Religion (3) Religions of selected non-literate peoples. Role of religion in their social and cultural systems. (Same as Anthropology 302.)

305 Modern Religious Thought (3) Major themes, issues, and thinkers of 19th- and/or 20th-century religion.

309 Elementary Classical Hebrew (3) Basic elements of Hebrew phonology, script, morphology, and syntax. Introduction to basic elements of text, form, and literary criticism.

310 Elementary Classical Hebrew (3) Basic elements of Hebrew phonology, script, morphology, and syntax. Introduction to basic elements of text, form, and literary criticism.

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.)
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 Background: 376 or 379 or 383.

385 Contemporary Jewish Thinkers (3) Renewal trends in 19th and 20th-century Judaism. Writing-emphasis course.  
(Same as Judaic Studies 385.)  
Repeatability: May be repeated. Maximum 6 hours.

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, and 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 complexity of the Middle East. Israeli culture and literature. Writing-emphasis course.  
(Same as Judaic Studies 405.)

415 Psychology of Religion (3) (See Psychology 415.)

425 Seminar in Western Religions (3) Selected figures, themes, movements, and problems.  
Repeatability: May be repeated. Maximum 6 hours.  
Registration Permission: Consent of instructor.

430 Seminar in American Religion (3) Selected figures, themes, movements, and problems.  
Repeatability: May be repeated. Maximum 6 hours.  
Registration Permission: Consent of instructor.

440 Seminar in Comparative Religion (3) Selected figures, themes, movements, and problems.  
Repeatability: May be repeated. Maximum 6 hours.  
Registration Permission: Consent of instructor.

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.  
(Re) Corequisite(s): 374.

490 Readings and Research in Religious Studies (3)  
Repeatability: May be repeated. Maximum 6 hours.  
Registration Permission: Consent of instructor.

491 Foreign Study (1-15)  
Repeatability: May be repeated. Maximum 15 hours.

492 Off-Campus Study (1-15)  
Repeatability: May be repeated. Maximum 15 hours.

493 Independent Study (1-15)  
Repeatability: May be repeated. Maximum 15 hours.

499 Proseminar in Religious Studies (3) For advanced students in religious studies, required for majors. Selected topics, e.g., nature and function of myth in religion, problem of evil, transcendence, theories of religion, hermeneutics, integrating various disciplines involved in study of religion.  
Repeatability: May be repeated. Maximum 6 hours.  
Registration Permission: Consent of instructor.

Retail and Consumer Sciences (865)

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 and Planning (4) Analysis of the merchandise buying function within different types of retail organizations and structures. Application of principles associated with retail buying, planning, and allocation. Computer simulations with emphasis on Excel.  
Contact Hour Distribution: 3 hours and 1 hour discussion/lab.  
(Re) Prerequisite(s): 210 and Mathematics 125.  
(De) Prerequisite(s): Accounting 200.

311 Human Resources Management in Hospitality and Retailing (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 and design principles, specification writing, line building, and brand management to develop apparel products for target markets.

341 Consumers in the Marketplace (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.  
(Re) Prerequisite(s): 210 and 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.  
(See as Hotel, Restaurant, and Tourism 360.)  
(Re) Prerequisite(s): 210 or Hotel, Restaurant, and Tourism 210.

376 Strategies for Growth (3) Issues concerning achievement of business growth with focus upon the consumer, operational, and financial dimensions of the service industry.  
(Re) Prerequisite(s): 310 and Marketing 300.  
(De) Prerequisite(s): 341.

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.  
(Re) Prerequisite(s): 376 and 422.

(Re) Prerequisite(s): 210 and Marketing 300.  
(De) Prerequisite(s): 341 and Accounting 200.

412 e-Retailing (3) Issues concerning the use of the Internet and related technologies to improve and/or transform retail businesses. Emphasizes analysis of consumers and product/service types in online retailing and the effective management of online catalogs. Also direct retailing methods that involve technology such as interactive TV and m-commerce (mobile).  
(Re) Prerequisite(s): 210 and 341.  
(De) Prerequisite(s): 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.  
(Re) Prerequisite(s): 210 and 341.  
(De) Prerequisite(s): Marketing 300.

421 International Retailing (3) The study and analysis of retailing in an international and global setting. Retail processes and practices and issues within international environments – cultural, economic, social, political, legal, and business.  
(Re) Prerequisite(s): 210 and 341.  
(De) Prerequisite(s): Marketing 300.
422 Professional Experience in Retail and Consumer Sciences (6) Supervised educational experiences in selected retail and consumer sciences service operations.
(Re) Prerequisite(s): 310 and Hotel, Restaurant, and Tourism 390.
Registration Restriction(s): Retail and consumer sciences major.

480 Retail Market Planning and Execution (1-3) Exposes students to the process of planning and executing a market trip. Involves off-campus experience at a major market center.
Repeatability: May be repeated. Maximum 6 hours.
(Re) Prerequisite(s): 310.
Registration Permission: Consent of instructor.

482 Professional Experience in Retailing II (6) Supervised professional experience in selected retail operations that build upon first professional experience.
(Re) Prerequisite(s): 410 and 422.

484 International Retail Industry Study Tour (3) Group study abroad involving academic research and field investigation.
Repeatability: May be repeated. Maximum 6 hours.
Recommended Background: 210.
Registration Permission: Consent of instructor.

493 Directed Study (1-3) Individual problems for junior and senior students with special interests in retail and consumer sciences.
Repeatability: May be repeated. Maximum 6 hours.
Recommended Background: Minimum student level – junior.
Registration Permission: Consent of instructor.

495 Special Topics (3) Topics in retail and consumer sciences.
Repeatability: May be repeated. Maximum 9 hours.
Recommended Background: Minimum student level – junior.
Registration Permission: Consent of instructor.

497 Honors: Retail and Consumer Sciences (1-3) Individual problems for junior and senior students showing special ability and interest in retail and consumer sciences.
Repeatability: May be repeated. Maximum 6 hours.
Recommended Background: Minimum student level – junior.
Registration Permission: Consent of instructor.

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.
Repeatability: May be repeated. Maximum 6 hours.
Recommended Background: Minimum student level – junior.
Registration Permission: Consent of instructor.

Rural Sociology (880)

380 Rural Sociology (3) Topics include the analysis of U.S. land tenure systems, agricultural regions, rural minorities, Amish, farmer organizations, rural institutions, community decision-making, local government, rural policy issues, rural industrialization, food policy, and cross-cultural analysis.

Russian (886)

101 Elementary Russian (4)

102 Elementary Russian (4)
(Re) Prerequisite(s): 101.

201 Intermediate Russian (4) (CC)
(Re) Prerequisite(s): 102.

202 Intermediate Russian (4) (CC)
(Re) Prerequisite(s): 201.

221 Rebels, Dreamers, and Fools: The Outcast in 19th Century Russian Literature (3) Texts in English translation. Writing-emphasis course.
(AH) (WC)
Credit Restriction: No foreign language credit.

222 Heaven or Hell: Utopias and Dystopias in 20th-Century Russian Literature (3) Texts in English translation. Writing-emphasis course.
(AH)
Credit Restriction: No foreign language credit.

311 Russian Composition and Conversation (3) Practice in writing and speaking. Grammar review and vocabulary building.
(Re) Prerequisite(s): 202.

312 Russian Composition and Conversation (3) Practice in writing and speaking. Grammar review and vocabulary building.
(Re) Prerequisite(s): 311.

325 Russian Film (3) A study of the 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 Advanced Grammar, Conversation, and Composition (3)
(Re) Prerequisite(s): 312.

402 Advanced Grammar, Conversation, and Composition (3)
(Re) Prerequisite(s): 401.

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 with readings in Russian for majors. Writing-emphasis course.

425 Introduction to Descriptive Linguistics (3) (See French 425.)

426 Methods of Historical Linguistics (3) (See German 426.)

430 Selected Topics in Russian Literature (3) Writing-emphasis course.
Repeatability: May be repeated if topic differs. Maximum 9 hours.

451 Senior Seminar (3) Intensive study of language, literary style, and literary criticism based on selected major novels.
(Re) Prerequisite(s): 312.
Comment(s): For students majoring in Russian; minors admitted at the discretion of the instructor.

452 Senior Seminar (3) Intensive study of language, literary style, and literary criticism based on selected major novels.
(Re) Prerequisite(s): 312.
Comment(s): For students majoring in Russian; minors admitted at the discretion of the instructor.

490 Internship (1-15) Career-related experiences in the United States or abroad.
Grading Restriction: Satisfactory/No Credit grading only.
Repeatability: May be repeated. Maximum 15 hours.
Registration Restriction(s): Russian major/language and world business concentration.

491 Foreign Study (1-15)
Repeatability: May be repeated. Maximum 15 hours.

493 Independent Study (1-15)
Repeatability: May be repeated. Maximum 15 hours.

Safety (890)

406 Death, Dying and Bereavement (3) (See Health 406.)


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.
Registration Restriction(s): Minimum student level – junior.

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.
Registration Restriction(s): Minimum student level – senior.

Science Education (899)

496 Teaching Science Grades 7-12 (3) Methods, materials, recent trends in science and environmental education programs for secondary schools.
Registration Restriction(s): Qualification – admission to teacher education.
Social Science Education (900)
454 Teaching Strategies and Issues in Social Studies Education (3)
Registration Restriction(s): Qualification – admission to teacher education.

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, and practice methods. Designed to assist students to consider their ability for careers in social work.


312 Interviewing Skills and the Helping Relationship in Social Work Practice (3) Knowledge, values, and skills for entry-level generalist practice in a variety of settings. The social work problem-solving process, different size client systems, ethnic-sensitive assumptions, and the worker’s regard for person-environment configuration. Concurrent skills laboratory.
Comment(s): Progression required. Social work majors only.

313 Social Work Practice with Individuals and Families (3) In-depth study of generalist practice with individuals and families. Practice roles, value dilemmas, and working with people of diverse backgrounds. Concurrent skills laboratory. (RE) Prerequisite(s): 312.
Comment(s): Progression required. Social work majors only.

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. (WC) (RE) Prerequisite(s): English 101 and English 102.
Comment(s): Progression or consent of instructor required.

315 Social Work Practice with Groups, Organizations and Communities (3) Generalist practice with emphasis on groups, organizations and communities, including treatment theories, techniques, and issues. (RE) Prerequisite(s): 312.
Comment(s): Progression required. Social work majors only.

316 Understanding Diversity in a Global Society (3) Exploring race, ethnicity, gender, class, and sexual orientations from a social work perspective. Students develop self-awareness of their own culture and the culture of others and acquire knowledge and understanding of the impact of oppression on diverse groups.
Comment(s): Progression or consent of instructor required.

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. (RE) Prerequisite(s): 312.
Comment(s): Progression required. Social work majors only.

410 Social Work Research (3) Scientific method and research strategies to evaluate one’s practice and/or social service delivery. Knowledge of statistical techniques required. (RE) Prerequisite(s): Mathematics 115 or Psychology 385. (RE) Corequisite(s): 480.
Comment(s): Progression required. Social work majors only.

Comment(s): Progression or consent of instructor required.

460 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. (RE) Prerequisite(s): 410 and 480. (RE) Corequisite(s): 481.
Comment(s): Progression required. Social work majors only.

461 Child Welfare 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.

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. (RE) Prerequisite(s): Progression or consent of instructor required.

480 Field Practice in Social Work II (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. (RE) Prerequisite(s): 380. (RE) Corequisite(s): 410.
Comment(s): Progression required. Social work majors only.

481 Field Practice in Social Work III (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. (RE) Prerequisite(s): 410 and 480. (RE) Corequisite(s): 460.
Comment(s): Progression required. Social work majors only.

491 International Study (1-15) Repeatability: May be repeated. Maximum 15 hours. Registration Permission: Consent of instructor.

492 Off-Campus Study (1-15) Repeatability: May be repeated. Maximum 15 hours. Registration Permission: Consent of instructor.

493 Independent Study (1-15) Repeatability: May be repeated. Maximum 15 hours. Registration Permission: Consent of instructor.

Sociology (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 participation within the context of social change. Assessment of control strategies and redress of injustices. (SS)

117 Honors: Social Justice and Social Change (3) (SS) Comment(s): 3.00 GPA required for first-year students; 28 ACT composite or 1200 SAT required for incoming students.

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) (SS) Comment(s): 3.00 GPA required for first-year students; 28 ACT composite or 1200 SAT required for incoming students.

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 relationships between historic processes and the contemporary world and the reciprocal influences of local dynamics and global change. (Same as Global Studies 250.) (CC)

260 Introduction to the Study of Environmental Issues (2) Examination of selected environmental issues and their significance in contemporary societies. Demonstrates the utility of combining sociological and humanistic perspectives of the environment with the more traditional biophysical perspectives. Writing-emphasis course. (WC)

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 and 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. (RE) Prerequisite(s): 110 or 120.
Comment(s): C or higher in 110 or 120 required.

331 Sociological Research (3) Selected issues in philosophy of social science, research design, sampling, methods of data collection, and interpretation. (RE) Prerequisite(s): Statistics 201. Comment(s): C or higher in 110 or 120 required.


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 Africana 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.

Repeatability: May be repeated. Maximum 6 hours.

422 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 Africana 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 course focusing on the criminal courts and institutions and programs such as the prison, probation, and parole. Analysis of their operation and impacts.

Recommended Background: Completion of 350.

452 Race, Ethnicity, Crime, and 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. (Same as Women’s Studies 454.)

455 Society and Law (3) How laws and legal processes are affected by social change, the social impact of legal sanctions, and relations between law and social justice. Writing-emphasis course.

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.


463 Community Sociology (3) The environment shapes human interactions and human interactions shape the construction of environments. This course explores how individuals construct and participate in communities.

464 Urban Ecology (3) The relation of humans to their urban environment with emphasis on conservation and the use of appropriate technology.

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. Writing-emphasis course.

(RE) Prerequisite(s): 110 or 120.

491 Foreign Study (1-15) Repeatability: May be repeated. Maximum 15 hours.

492 Off-Campus Study (1-15) Repeatability: May be repeated. Maximum 15 hours.

493 Independent Study (1-15) Repeatability: 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. (WC)

Comment(s): For sociology majors with senior standing.

Spanish (924)

111 Elementary Spanish (3) Language laboratory required.

Credit Restriction: Not available to students eligible for 150.

112 Elementary Spanish (3) Language laboratory required.

Credit Restriction: Not available to students eligible for 150.

(Re) Prerequisite(s): 111.

150 Intermediate Spanish Transition (3) This course is designed to prepare students for enrollment in 211.

Credit Restriction: 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 6 hours of elementary language credit awarded through placement examination.

Recommended Background: At least 2 years of Spanish in high school.

Comment(s): Placement exam required.

211 Intermediate Spanish (3) (CC)

(De) Prerequisite(s): 112 or 150 or departmental placement exam.

Comment(s): Students who place in 200-level courses from high school will receive 6 hours of elementary Spanish credit.

212 Intermediate Spanish (3) (CC)

(Re) Prerequisite(s): 211 or 217.

Comment(s): Students who place in 200-level courses from high school will receive 6 hours of elementary Spanish credit.

217 Honors: Intermediate Spanish (3) Honors course for students of superior ability in Spanish. Students follow enriched program with continuing emphasis upon speaking ability and with an introduction to reading literary selections. (CC)

Comment(s): Departmental placement test required.

218 Honors: Intermediate Spanish (3) Honors course for students of superior ability in Spanish. Students follow enriched program with continuing emphasis upon speaking ability and with an introduction to reading literary selections. (CC)

(Re) Prerequisite(s): 217.

Comment(s): Incoming freshmen are admitted on the basis of a diagnostic test, high school average and performance on the ACT. Students who earn an A or B in 218 receive credit for 300.

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.

(De) Prerequisite(s): 212 or 218 or departmental placement exam.

Comment(s): 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.

Credit Restriction: Not available for credit for students whose level of proficiency in Spanish is superior as defined by the ACTFL Proficiency Guidelines.

(Re) Prerequisite(s): 300 or 218.

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.

Credit Restriction: Not available for credit for students whose level of proficiency in Spanish is superior as defined by the ACTFL Proficiency Guidelines.

(Re) Prerequisite(s): 218 or 300.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>330</td>
<td>Textual Analysis (3)</td>
<td>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. (RE) Prerequisite(s): 323.</td>
</tr>
<tr>
<td>331</td>
<td>Introduction to Hispanic Culture (3)</td>
<td>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. (Same as Latin American Studies 331.) (RE) Prerequisite(s): 323.</td>
</tr>
<tr>
<td>332</td>
<td>Survey of Spanish Literature: 1700-Present (3)</td>
<td>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, the realists of the 19th century, the Generation of ‘98, the avant-garde of the 1920s and 1930s, social realism, women writers, and contemporary developments. Writing-emphasis course. (RE) Prerequisite(s): 323. (RE) Corequisite(s): 330.</td>
</tr>
<tr>
<td>333</td>
<td>Survey of Spanish-American Literature: 1700-Present (3)</td>
<td>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. (Same as Latin American Studies 333.) (RE) Prerequisite(s): 323. (RE) Corequisite(s): 330.</td>
</tr>
<tr>
<td>334</td>
<td>Survey of Hispanic Literatures: Beginnings-1700 (3)</td>
<td>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. (Same as Latin American Studies 334.) (RE) Prerequisite(s): 323. (RE) Corequisite(s): 330.</td>
</tr>
<tr>
<td>345</td>
<td>Language and Culture of the Hispanic Business World (3)</td>
<td>Commercial vocabulary, business letters, import-export, marketing, Hispanic social management culture, and the global significance of economic and political developments in Spanish-speaking countries. (RE) Prerequisite(s): 323.</td>
</tr>
<tr>
<td>346</td>
<td>Language and Culture of the Hispanic Business World (3)</td>
<td>Commercial vocabulary, business letters, import-export, marketing, Hispanic social management culture, and the global significance of economic and political developments in Spanish-speaking countries. (RE) Prerequisite(s): 323.</td>
</tr>
<tr>
<td>401</td>
<td>Cultural Plurality and Institutional Changes in Latin America (3)</td>
<td>Value systems, behavioral patterns, political parties, role of the military, the church, educational institutions, dictatorship and nationalism. Writing-emphasis course. (Same as Latin American Studies 401.) Credit Restriction: May not be applied toward the Spanish major. Recommended Background: 6 hours of coursework in Latin American studies.</td>
</tr>
<tr>
<td>402</td>
<td>Latin American Studies Seminar (3)</td>
<td>Selected topics in Latin American studies. Writing-emphasis course. (Same as Latin American Studies 402.) Repeatability: May be repeated. Maximum 6 hours. Credit Restriction: May not be applied toward the Spanish major. Recommended Background: 6 hours of 300- or 400-level coursework in Latin American studies.</td>
</tr>
<tr>
<td>420</td>
<td>Applied Linguistics (3)</td>
<td>Introduction to applied linguistics, with a special emphasis on the theoretical and practical aspects of the teaching of Spanish as a foreign language. Fundamental concepts in linguistics within the context of Spanish grammar and their use in the study of second language acquisition, foreign language learning and foreign language teaching. Conducted in Spanish with readings in both English and Spanish. (RE) Prerequisite(s): 323.</td>
</tr>
<tr>
<td>421</td>
<td>Phonetics (3)</td>
<td>(RE) Prerequisite(s): 323.</td>
</tr>
</tbody>
</table>

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. (RE) Prerequisite(s): 323. Comment(s): 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. (RE) Prerequisite(s): 323. Comment(s): Not available for credit to 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.) |

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. (Same as Linguistics 431.) Repeatability: May be repeated with permission of department. Maximum 6 hours. (RE) Prerequisite(s): 323. (RE) Corequisite(s): 330. |

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. (RE) Prerequisite(s): 323. (RE) Corequisite(s): 330. Comment(s): Requires 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. Taught in Spanish. Writing-emphasis course. (Same as Cinema Studies 434.) Repeatability: May be repeated with consent of department. Maximum 6 hours. (RE) Prerequisite(s): 323. (RE) Corequisite(s): 330. Comment(s): Requires completion of major or minor requirements in 332, 333, 334. |

461 Special Topics (3) Focus on some aspect of Hispanic literature, culture, linguistics, or foreign language pedagogy. Topics vary. Repeatability: 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. Writing-emphasis course. (Same as Cinema Studies 465; Latin American Studies 465.) Contact Hour Distribution: 1 hour lecture, 2 hours screening, and 1 hour discussion. Credit Restriction: May not be applied toward Spanish major. |

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. (Same as Latin American Studies 479.) Repeatability: May be repeated with consent of department. Maximum 6 hours. (RE) Prerequisite(s): 323. (RE) Corequisite(s): 330. Comment(s): Requires completion of major or minor requirements in 332, 333, 334. |

480 Social Forces in Hispanic Literary Expression (3) Analysis of major Hispanic texts that address factors and events that influenced and/or continue to influence the social and cultural evolution of the Hispanic world, including literature itself. Writing-emphasis course. Repeatability: May be repeated with consent of department. Maximum 6 hours. (RE) Prerequisite(s): 323. (RE) Corequisite(s): 330. Comment(s): Requires completion of major or minor requirements in 332, 333, 334. |
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.
  Repeatability: May be repeated with consent of department. Maximum 6 hours.  
  (RE) Prerequisite(s): 323.  
  (RE) Corequisite(s): 330.  
  Comment(s): Requires completion of major or minor requirements in 332, 333, 334.

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; and relationship between Jews, Christians, and Moors in Spain. Writing-emphasis course.
  Repeatability: May be repeated with consent of department. Maximum 6 hours.  
  (RE) Prerequisite(s): 323.  
  (RE) Corequisite(s): 330.  
  Comment(s): Requires completion of major or minor requirements in 332, 333, 334.

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 light of historical contexts in which those relationships emerged. Writing-emphasis course.
  Repeatability: May be repeated with consent of department. Maximum 6 hours.  
  (RE) Prerequisite(s): 323.  
  (RE) Corequisite(s): 330.  
  Comment(s): Requires completion of major or minor requirements in 332, 333, 334.

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.
  Repeatability: May be repeated with consent of department. Maximum 6 hours.  
  (RE) Prerequisite(s): 323.  
  (RE) Corequisite(s): 330.  
  Comment(s): Requires completion of major or minor requirements in 332, 333, 334.

490 Internship (1-15) Career-related experiences in the United States or abroad.
  Grading Restriction: Satisfactory/No Credit grading only.
  Repeatability: May be repeated. Maximum 15 hours.
  Registration Restriction(s): Spanish major/language and world business concentration.

491 Foreign Study (1-15) Repeatability: May be repeated. Maximum 15 hours.

493 Independent Study (1-15) Repeatability: May be repeated. Maximum 15 hours.

494 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.
  Grading Restriction: Satisfactory/No Credit grading only.
  Repeatability: May be repeated. Maximum 3 hours. Maximum 1 hour credit per semester.
  Credit Restriction: May not be applied toward the Spanish major.
  (RE) Prerequisite(s): 323.
  (RE) Corequisite(s): 330.
  Comment(s): Requires completion of 18 hours of upper-division Spanish.
  Registration Permission: Consent of instructor.

Special Education (932)

402 Professional Studies: Special Education and Diverse Learners (3) Characteristics and needs of students with disabilities and diverse learners with emphasis on educational implications. Techniques, strategies and resources for teaching and assessing students with diverse learning, behavioral, medical and/or sociocultural characteristics, and the requirements of special education and other relevant laws.
  (RE) Prerequisite(s): Educational Psychology 210.
  Registration Restriction(s): Qualification – 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, and policies and procedures used in the field.
  Registration Restriction(s): Qualification – admission to teacher education.

419 Psychology and Education of Students with Mild Disabilities (6) Nature and characteristics of persons with mild handicaps and the educational strategies appropriate for these persons.
  (RE) Prerequisite(s): 402.
  (RE) Corequisite(s): 420.

420 Field Experience in Special Education Programs (3) Practicum in teaching special education programs. Planning, developing, implementing, and evaluating instruction.
  Grading Restriction: Satisfactory/No Credit grading only.
  (RE) Prerequisite(s): 402.
  (RE) Corequisite(s): 419.

430 Practicum in Applied Behavior Analysis (3) Emphasizes the application of applied behavior analysis principles including the study of designing, implementing, and evaluating behavior analytic interventions relevant to alleviating significant problem behaviors in the classroom setting. Learners examine topics in the use of applied behavior analysis such as direct instruction, behavior reduction, functional analysis, positive behavioral supports, and ethical issues in the use of various procedures.
  Registration Restriction(s): Qualification – admission to teacher education.

431 Field Experience in Comprehensive Programs (3) On-site teaching experience with moderately and severely handicapped children and youth.
  Grading Restriction: Satisfactory/No Credit grading only.
  (RE) Prerequisite(s): 402.
  (RE) Corequisite(s): 432.

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 those persons.
  (RE) Prerequisite(s): 402.
  (RE) Corequisite(s): 431.

435 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.

459 Neuromuscular and Health Disorders: Educational Implications (3) Neurodevelopmental impairments, physical disabilities, sensory impairments and special health conditions, including genetic disorders and autism. Investigation of instructional techniques and adaptations and implementation of universal precautions.
  Registration Restriction(s): Qualification - admission to teacher education.

470 Psychology of the Exceptional Child (3) General characteristics and educational needs of exceptional children. Implications of developmental variations for functioning as adults.
  Comment(s): Non-education majors only.

471 Early Childhood Special Education (6) Assessment, curriculum planning and development, and teaching approaches used in early childhood special education.
  Registration Restriction(s): Qualification – admission to teacher education.

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.
  Grading Restriction: Satisfactory/No Credit grading only.
  Repeatability: May be repeated. Maximum 5 hours.
  Registration Restriction(s): Qualification – admission to teacher education.

Sport Management (957)

100 Orientation to Sport Management (1) Overview of the sports industry and sport management major. To be taken the first semester as a 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.
  (RE) Prerequisite(s): 100.

290 Practicum 1 (3) Supervised part-time field experience (minimum of 120 clock hours) at an accredited site for the purpose of clarifying career goals.
  Grading Restriction: Satisfactory/No Credit grading only.
  Registration Restriction(s): Sport management major.
**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. Students will also be introduced to the basic fundamentals of investing and accounting, and how they relate to the sport industry. Students will understand how financing works in the sports industry and how corporations are valued. Students will also be introduced to the basic fundamentals of investing and accounting, and how they relate to the sport industry.
  - **Note:** Students will be introduced to the basic fundamentals of investing and accounting, and how they relate to the sport industry.
  - **Registration Restriction:** Sport management major.

- **290 Principles of Movement Control and Skill Learning (3)** Principles and guidelines explaining the performance and learning of skilled actions. Emphasis placed on the consideration of how factors related to the learner, the task, and the performance context influence instructional decisions.
  - **Registration Restriction:** Minimum student level – sophomore; exercise science or recreation and leisure studies majors.

- **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 will turn 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 sport management.
  - **Note:** May be repeated. Maximum 6 hours.
  - **Registration Restriction:** Sport management major.

- **385 Practicum II (3)** Supervised part-time experience (minimum of 120 clock hours) at an approved site offering sport management opportunities.
  - **Grading Restriction:** Satisfactory/No Credit grading only.
  - **Registration Restriction:** Sport management major.

- **435 Development and Revenue Generation in Sport (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.
  - **Registration Restriction:** Sport management major.

- **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.
  - **Registration Restriction:** Sport management major.

- **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, and tort law impact sport management decisions. Special emphasis placed on discrimination in sport (e.g., race, gender, ethnicity, and disability).
  - **Registration Restriction:** Sport management major.

- **460 Development and Revenue Generation in Sport (3)** Designed to provide an overview of the 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.
  - **Registration Restriction:** Sport management major.

- **490 Sport Management Internship (6-12)** Supervised work experience (minimum of 480 clock hours) at an approved site offering sport management opportunities. Emphasis on managerial tasks and administrative procedures.
  - **Grading Restriction:** Satisfactory/No Credit grading only.
  - **Registration Restriction:** Sport management major.

- **493 Directed Independent Studies (1-3)** Independent study in a specialized area of sport management.
  - **Registration Restriction:** Sport management major.

**Statistics (962)**

  - **Register Restriction(s):** Mathematics 125 or Mathematics 141.

- **207 Honors: Introduction to Statistics (3)** Intended as an alternative to 201 for higher GPA students.
  - **Contact Hour Distribution:** Two 50-minute lectures and one 110-minute lab per week.
  - **Contact Restriction:** Mathematics 125 or Mathematics 141.
  - **Recommended Background:** 28 composite ACT or 1250 composite SAT.

  - **Registration Restriction:** Mathematics 142 or Mathematics 148.

- **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.
  - **Registration Restriction:** 201 or 251.

- **330 Experimental Methods (3)** Strategies of experimentation: randomization, blocking, sequential experimentation, replication. Design and analysis of experiments to collect nominal data (paired comparison, triangle tests), ordinal data (rating and ranking experiments) and numerical data (simple and multiple factor experiments, fractional factorials). Use of statistical computing software. Applied course for a general audience.
  - **Registration Restriction:** 201 or 251.

(Re) Prerequisite(s): 201 or 251.

471 Statistical Methods (3) Numeric and graphic description of data, probability and probability distributions, simulation, and sampling distributions. Estimation and hypothesis testing for one and two samples, parametric and nonparametric approaches, and bootstrapping. Tests for count data, simple and multiple linear regression, diagnostics and validation, and analysis of variance. Uses SAS and other statistical software.

(Re) Prerequisite(s): 320.


(Re) Prerequisite(s): 320.


(Re) Prerequisite(s): 330.

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.

(Re) Prerequisite(s): 471.


(Re) Prerequisite(s): 320.

483 Special Topics in Statistics (1-3) Topics vary.

Repeatability: May be repeated. Maximum 6 hours.

Registration Permission: Consent of instructor.

485 Principles of Statistical Process Management (3) Control charts and other statistical techniques applied to management of business processes.

Registration Permission: Consent of department head.

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.

Grading Restriction: Satisfactory/No Credit grading only.

Registration Permission: Consent of department head.

493 Independent Study (2-6) Faculty directed reading and investigation of specified topic in probability or statistics culminating in a written report.

Repeatability: May be repeated. Maximum 6 hours.

Registration Permission: Consent of department head.

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.

(Re) Prerequisite(s): 220.

242 Fundamentals of Costume Design and Technology (3) Introduction to the elements of costume design, technology, and the design process. Hands-on and lab-intensive.

252 Fundamentals of Scene Design and Technology (3) Introduction to the elements of scene design, basic scenic technology, and the design process. Hands-on and lab-intensive.

262 Fundamentals of Lighting Design and Technology (3) Introduction to the elements of theater lighting design, basic technology and the design process. Hands-on and lab-intensive.

300 Play Analysis (3) Study of methods and tools used in script analysis for the purpose of play production. (WC)

(Re) Prerequisite(s): 100.

320 Advanced Acting I (3) Character study and scene study in 20th century American plays.

(Re) Prerequisite(s): 221.


(Re) Prerequisite(s): 320.

323 Stage Movement (3) Introduction to movement/kinesthetic awareness techniques and their application to performance.

(Re) Prerequisite(s): 221.

325 Fundamentals of Musical Theatre (3) Introduction to musical theatre, including reading music, singing techniques, basic dance, and an overview of musical theatre styles.

(Re) Prerequisite(s): 220.

326 Advanced Voice and Speech (3) Breath-centered voice production. Exploration and control of shaping sound. IPA and text work. Gared toward acting for the stage.

(Re) Prerequisite(s): 221.

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.

(Re) Prerequisite(s): 224.

352 Entertainment Technology I (3) Techniques in live entertainment production, including scenery techniques, structures, special effects, and rigging.

(Re) Prerequisite(s): 252.

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 principles, Project and lab-intensive.

(Re) Prerequisite(s): 262.

410 Special Studies in History, Literature, and Criticism (3) Concentrated study in a given period or area of theatre history, literature or criticism. Content varies.

Repeatability: May be repeated. Maximum 6 hours.

411 Theatre History I (3) Antiquity to 1700. Major historical periods and diverse cultural traditions in world theatre history.

(Re) Prerequisite(s): 300.

412 Theatre History II (3) 1700 to contemporary theatre. Major historical periods and diverse cultural traditions in world theatre history.

(Re) Prerequisite(s): 300.

420 Special Studies in Acting (3) Exercises in selected concentrated areas such as styles, techniques, approaches, e.g., Shakespeare, movement, humor. Content varies.

Repeatability: May be repeated. Maximum 9 hours.

(De) Prerequisite(s): 262.

Registration Permission: Consent of instructor.

422 Ensemble (4) Intensive studio work for students interested in the performance aspect of the major. Content varies.

Repeatability: May be repeated. Maximum 12 hours.

(Re) Prerequisite(s): 320.

Comment(s): An audition or consent of the instructor is required.

425 Advanced Musical Theatre (3) Study and practice of musical theatre material including both dance and vocal work.

(Re) Prerequisite(s): 325.

430 Principles of Play Directing (3) Problems in composition, picturization, rhythm, and movement.

(Re) Prerequisite(s): 220.

431 Principles of Play Directing (3) Problems in composition, picturization, rhythm, and movement.

(Re) Prerequisite(s): 430.

446 Costume Patterning (3) Draping patterns for period costumes. Includes corsetry and the study of historic patterns 1500-1900.

450 Special Topics in Design and Technology (1-3) Content varies.

Repeatability: May be repeated. Maximum 9 hours.

Registration Permission: Consent of instructor.
452 Entertainment Technology II (3) Automation systems in live entertainment, including advanced rigging and flying for stage and film.

464 Computer Aided Drafting for the Theatre (3) Introduction to entertainment drafting. Emphasis on 2-D graphical standards, drafting techniques, and drawing layout and presentation.

470 Playwriting (3) Advanced instruction in the writing of plays.
Registration Permission: Consent of instructor.

481 Applied Theatre (1) Laboratory in applied theatre techniques for departmental productions.
Repeatability: May be repeated. Maximum 6 hours.
Registration Permission: Consent of instructor.

484 Photography for the Theatre (3) Digital photography techniques for shooting live performance events under challenging lighting environments.
Registration Permission: Consent of instructor.

491 Foreign Study (1-15)
Repeatability: May be repeated. Maximum 15 hours.

492 Off-Campus Study (1-15)
Repeatability: May be repeated. Maximum 15 hours.

493 Independent Study (1-15)
Repeatability: May be repeated. Maximum 15 hours.

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.
Repeatability: May be repeated. Maximum 6 hours.

352 Field Experiences in Teaching: Secondary I (1) Field experiences in tasks related to teaching and teacher roles.
Grading Restriction: Satisfactory/No Credit grading only.
Registration Restriction(s): Qualification — admission to teacher education.

353 Field Experience in Teaching: Secondary II (1) Field experiences in tasks related to teaching and to teacher roles.
Grading Restriction: Satisfactory/No Credit grading only.
Registration Restriction(s): Qualification — admission to teacher education.

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.
Registration Restriction(s): Qualification — admission to teacher education.

492 Directed Independent Study (1-3) Tutorial and specialized area.
Registration Permission: Consent of instructor.

493 Independent Study (1-3)
Topics to be assigned.
Repeatability: May be repeated. Maximum 12 hours.

494 Supervised Readings (1-3)
Topics to be assigned.
Repeatability: May be repeated. Maximum 12 hours.

495 Special Topics (1-3)
Topics to be assigned.
Repeatability: May be repeated. Maximum 12 hours.

University Honors (983)
See Chancellor’s Honors Program for Honors-by-Contract information.

100 Chancellor’s Honors First-Year Seminar (1) Required of and limited to freshmen students in the Chancellor’s Honors Program. Introductory seminar focused on a topic within an academic discipline. Topics vary.
Grading Restriction: A, B, C, No Credit grading.

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. (AH)
Repeatability: May be repeated if topic differs. Maximum 6 hours.
(RE) Prerequisite(s): English 102 or English 118.

267 Special Topics in the Social Sciences (3) Examination of a selected issue in the social sciences from a multi-disciplinary perspective. Topics vary. (SS)
Repeatability: May be repeated if topic differs. Maximum 6 hours.
(RE) Prerequisite(s): English 102 or English 118.

277 Special Topics in Cultures and Civilizations (3) Examination of a selected global or cultural issue from a multi-disciplinary perspective. Topics vary. (CC)
Repeatability: May be repeated if topic differs. Maximum 6 hours.
(RE) Prerequisite(s): English 102 or English 118.

287 Special Topics in the Natural Sciences (3) Examination of a selected issue in the natural sciences from a multi-disciplinary perspective. Topics vary.
Repeatability: May be repeated if topic differs. Maximum 6 hours.
(RE) Prerequisite(s): English 102 or English 118.

337 Honors: Concentration in the Humanities (3) Small group studies of selected topics, issues, or problems with a concentration in the humanistic disciplines. Topics vary.
Repeatability: May be repeated if topic differs. Maximum 6 hours.
Comment(s): Open to all students with a GPA of 3.25 or greater.

347 Honors: Concentration in the Social Sciences (3) Small group studies of selected topics, issues, or problems with a concentration in the social sciences. Topics vary.
Repeatability: May be repeated if topic differs. Maximum 6 hours.
Comment(s): Open to all students with a GPA of 3.25 or greater.

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. Topics vary.
Repeatability: May be repeated if topic differs. Maximum 6 hours.
Comment(s): Open to all students with a GPA of 3.25 or greater.

491 Honors: Foreign Study (1-15) Open to any undergraduate honors student. Proposals must be approved in advance. Contact the director for information.
Repeatability: May be repeated. Maximum 15 hours.

492 Honors: Off-Campus Study (1-15) Open to any undergraduate honors student. Proposals must be approved in advance. Contact the director for information.
Repeatability: May be repeated. Maximum 15 hours.

493 Honors: Independent Study (1-9) Open to any undergraduate honors student. Proposals must be approved in advance by Chancellor’s Honors Program.
Grading Restriction: Letter grade only.
Repeatability: May be repeated. Maximum 9 hours.

499 Senior Honors Project (3) Substantial scholarly, scientific, or artistic endeavor representing the capstone of a student's undergraduate education. Required of all Chancellor’s Honors Program students not completing an equivalent senior project for an academic department or program.

University Studies (984)

210 Special Topics in University Studies (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.
Repeatability: May be repeated. Maximum 9 hours.
Registration Permission: Consent of instructor.

220 Special Topics in University Studies (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.
Repeatability: May be repeated. Maximum 9 hours.
Registration Permission: Consent of instructor.

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.
Repeatability: May be repeated. Maximum 9 hours.
Registration Permission: Consent of instructor.

310 Special Topics in University Studies (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.
Repeatability: 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.
Repeatability: May be repeated. Maximum 9 hours.
Registration Permission: Consent of instructor.
320 Special Topics in University Studies (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. Repeatability: May be repeated. Maximum 9 hours.

410 Advanced Topics in University Studies (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. Repeatability: May be repeated. Maximum 9 hours.

413 Art and Organism - Integrative Biology of Aesthetic Experience (3) (See Ecology and Evolutionary Biology 413.)

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. Repeatability: May be repeated. Maximum 9 hours.

420 Advanced Topics in University Studies (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. Repeatability: May be repeated. Maximum 9 hours.

491 Foreign Study (1-15) Repeatability: May be repeated. Maximum 15 hours.

492 Off-Campus Study (1-15) Repeatability: May be repeated. Maximum 15 hours.

493 Independent Study (1-15) Repeatability: May be repeated. Maximum 15 hours.

495 Research Experience (1-12) The course provides pre-professional experience in research, scholarship, and creative activity under the supervision of a faculty member. Grading Restriction: Satisfactory/No Credit only. Repeatability: May be repeated. Maximum 12 hours. Comments: Students should identify a prospective faculty supervisor and secure permission in advance of registration. Registration Restriction(s): Minimum 2.00 GPA. Registration Permission: Consent of instructor.

Wildlife and Fisheries Science (993)

101 Current Topics in Wildlife Health (1) All aspects of wildlife health, including current topics, emerging diseases, and impact of diseases on wildlife populations, general disease mechanisms, and career opportunities in the wildlife profession.

295 Practicum in Wildlife and Fisheries Sciences (1-3) Designed to give students practical, hands-on wildlife and/or fisheries experience working with a state, federal, or private natural resources organization. Provides credit for approved employment in natural resources management or research, 1 hour credit for every 160 hours of work. Students may find work on their own or with faculty assistance. Students must submit an approved work plan to their advisor, keep a daily log submitted every 2 weeks and prepare a final written report. Repeatability: May be repeated. Maximum 6 hours. Comments: Restricted to forestry and wildlife and fisheries science majors.


305 Prescribed Fire Management (2) Prescribed fire ecology, use, and management in forest stands. (RE) Prerequisite(s): Forestry, Wildlife and Fisheries 212. (RE) Corequisite(s): 323 and 341.

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. (RE) Corequisite(s): 305 and 341.

340 Wetlands Ecology and Management (2) Ecology, restoration, and management of wetland ecosystems, including biotic and abiotic processes, functions, and wildlife considerations. (RE) Prerequisite(s): Forestry, Wildlife and Fisheries 317. (RE) Corequisite(s): 305 and 323.

341 Law Enforcement and Public Relations (2) 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. (RE) Prerequisite(s): English 102 and Communication Studies 210. (RE) Corequisite(s): 305 and 323.

350 Wildlife Damage Management (2) Principles and methods for wildlife damage management, including biological, regulatory, practical, and social considerations. Weekend field trips (2) required. Contact Hour Distribution: 2 hours lab and 1 lab or field. (RE) Prerequisite(s): Forestry, Wildlife and Fisheries 317. (RE) Corequisite(s): 305 and 323.

343 Amphibian Ecology and Conservation (3) In-depth examination of amphibian life-history strategies, community interactions, and hypothesized mechanisms of amphibian declines. Also covers amphibian monitoring, conservation and management. Credit Restriction: Student cannot receive credit for both 431 and 531.

410 Wildlife Physiology and Nutrition (3) An introduction and overview of the physiological and nutritional mechanisms important behind the regulation of wild animal populations (primarily wild birds and mammals). Wildlife responses to seasonal changes in habitat are critical for understanding management options. Discussion of use of chemical immobilization options, physiological indicators, and genetic analysis of wild animal population dynamics. Credit Restriction: Students may not receive credit for both 431 and 531.

424 Fisheries Techniques (3) Active and passive sampling techniques for fish and aquatic organisms. Population estimation methods, fish handling and transport, food habits analysis, and 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. Contact Hour Distribution: 1 hour and 1 lab or field. (RE) Prerequisite(s): Forestry, Wildlife and Fisheries 317. (RE) Corequisite(s): 305 and 323.

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. Contact Hour Distribution: 2 hours and 1 lab. (RE) Prerequisite(s): Forestry, Wildlife and Fisheries 317. (RE) Corequisite(s): 305 and 323.

442 Fisheries Science (3) Quantification and management of freshwater fisheries, including population estimation, age and growth, biological assessment, and stocking.

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. Weekend field trip required. Contact Hour Distribution: 2 hours and 1 lab. (RE) Prerequisite(s): Forestry, Wildlife and Fisheries 317.

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. Weekend field trip required. Contact Hour Distribution: 2 hours and 1 lab. (RE) Prerequisite(s): Forestry, Wildlife and Fisheries 317.

450 Fish Physiology (3) Mechanisms of gas transfer, circulation, excretion, osmoregulation, locomotion, and neural/hormonal control of these systems in fishes. Comparisons and contrasts with physiology of terrestrial animals. Practical applications of fish physiology to aquaculture, pollution assessment, and fisheries management. Registration Restriction(s): Minimum student level – senior.

455 Fish Culture (3) Principles, concepts, and techniques of culturing economically important fish and shellfish species. Contact Hour Distribution: 2 hours and 1 lab. Credit Restriction: Students cannot receive credit for both 455 and 555. Registration Restriction(s): Minimum student level – senior.
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. Credit Restriction: Students cannot receive credit for both 456 and 556. Registration Restriction(s): Minimum student level – senior.

493 Independent Study in Wildlife and Fisheries Science (1-15) Special research or individual problem in wildlife and fisheries science. Repeatability: May be repeated. Maximum 15 hours. Registration Permission: Consent of instructor.

496 Internship in Wildlife and Fisheries Science (3) Supervised experience at departmental-approved employment location arranged by the student. Internship learning objectives must be pre-approved by the advisor/instructor and 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. Repeatability: May be repeated. Maximum 15 hours. Registration Restriction(s): Minimum student level – junior.

Women's Studies (994)

210 Images of Women in Literature: Biography and Autobiography (3) Introduction to women's journals, diaries, biographies, and autobiographies. Writing-emphasis course.

215 Images of Women in Literature: Fiction, Poetry, Drama (3) Introduction to the study of women through the roles and stereotypes portrayed in a variety of literary genres (fiction, poetry, and drama), including works from diverse historical periods and cultures. Writing-emphasis course.

220 Women in Society (3) Role played by women in various societies during different historical periods. Factors which have limited women's participation in society. Social scientists' assumptions about women.

230 Marriage and Family: Roles and Relationships (3) (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 330.) (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.

360 Women in Cross-Cultural Perspective (3) A study of the changing role of women in various contemporary cultures – industrial democracies, developing nations, and 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. Repeatability: May be repeated. Maximum 6 hours.

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.)

454 Gender and Crime (3) (See Sociology 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.)