The University Studies Program has three general objectives: (1) to foster interdisciplinary teaching and scholarship, especially across college boundaries; (2) to promote active, integrative, and personal learning; and (3) to nurture the personal and intellectual development of faculty and students.

In pursuit of these objectives, University Studies sponsors several activities. It sponsors FACULTY COLLOQUIES, which are on-going, structured, interdisciplinary conversations on a topic or nexus of topics. Colloquies explore important contemporary issues which are sufficiently fundamental to involve the attention of faculty and students from several colleges. Current colloquies are: Technology, Society, and the Common Good; Aging and Society; Interdisciplinary Rhetoric Group; Psychoanalysis and the Humanities; Critical Theory Group; Forum on International Development; Appalachian Studies; Cultural Diversity; and Values in Higher Education and the Creativity Group. It offers INTERDISCIPLINARY COURSES, often team-taught, many stemming from the colloquy discussions. It also sponsors CENTRIFETALS, a series of eight faculty luncheons held over the academic year designed to encourage substantive conversation among faculty about their scholarship and creative work.

In addition, University Studies works with other units across campus to bring visiting scholars of interdisciplinary interest to our campus.

For further information, contact:
Dr. Neil Greenberg, Chair
440 Communications Building
PHONE: (423) 974-3599
FAX: (423) 974-2944
EMAIL: ngreenbe@utk.edu
DEPARTMENT OF MILITARY SCIENCE AND TACTICS

ARMY ROTC

Professor of Military Science and Tactics: Lieutenant Colonel Bill Woodcock, M.S., University of Southern Mississippi.

Assistant Professors: Major Robert Pace, B.S., Champaign, State University; Major Jim Mingus, B.S., Winona State University; Major Steve Thomas, B.S., North Georgia College; Captain Mark Girolami, B.A., Texas Tech University.

Senior Army Instructors: MSG Richard Coffman, B.S., Shepherd College; SFC Kevin Young; SGT Audio Profile SFC Jerry Blake.

MISSION

To commission the future officer leadership of the U.S. Army and motivate young people to be better citizens.

PURPOSE

Army ROTC is an educational program designed to provide the college student an opportunity to earn an Army commission as a Second Lieutenant or a National Guard commission as a Second Lieutenant. The program provides education and training that will develop the skills and attitudes vital to the professional officer. Upon successful completion of the program and graduation from the University, the students are commissioned as Second Lieutenants and enter the active duty, Army Reserve, or Army National Guard.

ARMY ROTC AT THE UNIVERSITY OF TENNESSEE—A TRADITION SINCE 1844

The military program at The University of Tennessee predates that of any other state university in the country, having been introduced in 1844. In that year, Professor Albert Miller, Jr., a U.S. military academy graduate, organized an infantry company. With the outbreak of the Mexican War, the entire company, as well as thousands of other Tennesseans, volunteered for service in the war. Thus, Tennessee became known as the "Volunteer State." When The University of Tennessee re-opened after the War Between the States, a system of military discipline was adopted. A Code of Military Regulations was drawn up and a copy was provided each student when he enlisted. The whole institution was put under regular U.S. military academy discipline. The student body was organized into a battalion of cadets, which consisted of four companies fully officered, armed and equipped under the command of the commandant and his staff of cadet officers. The University of Tennessee remained as a Military Garrison for a period of six years, until 1867. Military Science continued to be taught, since the University was a Land Grant Institution and instruction in Military Science was required by the 1862 Act of Congress. The National Defense Act of 1916 changed the old military organization into a ROTC unit. For the first time, the Federal Government began to pay a part of the uniform cost for basic course students; uniforms and other equipment were provided by the Government for Juniors and Seniors, and a monthly subsistence allowance was given to advanced course students. From 1928-1930, Major (later Brigadier General) Robert H. Neyland was the Professor of Military Sciences and football coach at the University of Tennessee.

Objectives of the program are to provide students with an understanding of the fundamental concepts and principles of military art and to extend to develop a basic understanding of associated professional knowledge, a strong sense of personal integrity, honor, and individual responsibility, and an appreciation of the requirements for national security, and to establish a sound basis for the students' future professional development.

ROTC draws young men and women for training from all geographical, economic, and social strata of our society as well as from the many educational disciplines required for the modern Army. The program ensures that men and women, educated in a liberal and broad spectrum of American institutions of higher learning, are commissioned annually into the Army 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 courses (MB 110, 120, 210, 220) are available to any UT student as an elective course without any military obligation.

Advanced Course: The Basic Course satisfies qualifications for entry into the Advanced Course, which is normally taken during the last two years of college.

Advanced Course: The Course is designed to develop and mentor "leaders of character," who, upon degree completion, will accept a commission in the U.S. Army. The Advanced Course requirement is that applicants have two academic years remaining at either the undergraduate or graduate level, or a combination of both. Students normally enter the Advanced Course during the last two years of their degree program (junior year for undergraduate students, first year of masters program for graduate level students). The Advanced Course is made up of six Military Science classes (MB 310, 320, 400, 410, 420, 430) and takes two years to complete. All classes except MB 430 are offered during the spring and fall academic sessions. MB 430 is a "paid" five-week summer camp held in Ft. Sill, Oklahoma. Students in the Advanced Course develop a personal understanding of the "whole person" concept. Cadets must maintain academic standards while taking on the additional responsibilities of ROTC. Advanced course students are required to participate in organized Army fitness sessions. Students enrolled in the Advanced Course are required to be full-time students, taking at least 12 hours each semester.
Placement credit and/or course substitution may be granted by the Professor of Military Science and Tactics on the basis of previous honorable active military service, participation in a Junior ROTC program, completion of MS 300, or completion of basic training and advanced individual training. A student may request placement credit for a portion of the entire Basic Course. Military Science courses taken at other colleges or universities are transferable as approved by the Professor of Military Science and Tactics.

REQUIREMENTS FOR ENROLLMENT AND CONTINUANCE

The general requirements for enrollment and continuance in the Army ROTC program are:

1. Basic Military Studies
   a. Be a citizen of the United States.
   b. Be physically qualified.
   c. Freshman and Sophomore standing.
   d. Student with higher standing requires consent of instructor.

2. Advanced Military Studies Courses applying for enrollment in the Advanced ROTC program who seek a Commission must:
   a. Have successfully completed Military Science 110, 120, 210, 220 or have completed the course work.
   b. Have two years remaining at the university.
   c. Have completed a minimum of 55 semester hours.
   d. Be under 30 years old at time of enrollment (waiver).
   e. Be enrolled as a full-time student, either in the ROTC program or in a partnership program.
   f. Meet military screening and physical requirements.
   g. Maintain a 2.0 G.P.A.
   h. Maintain B average in Military Science Courses as a scholarship student.

NOTE: Regularly enrolled students who meet the academic requirements may take individual courses as electives with the permission of the department head and academic advisor.

PLACEMENT CREDIT AND COURSE SUBSTITUTION

Payment and Entitlements All students enrolled in the Army ROTC program are furnished textbooks, uniforms, and an allowance of $150 per month during the academic year. While attending the ROTC summer studies each cadet receives approximately $740 for Basic Summer Studies, plus meals and a subsistence allowance of $750 for Advanced Summer Studies, plus meals and an allowance of $150 per month during the academic year. All students enrolled in the Army ROTC program are furnished texts and laboratory fees in addition to a subsistence allowance ($150/month) with membership in the Army as a career. Each scholarship program offers financial assistance to outstanding young men and women for enrollment in ROTC.

LEADERSHIP GRANT PROGRAM

The University of Tennessee ROTC Leadership Grants are designed to attract and retain high quality, full-time students to the Army ROTC program for future positions of leadership within their service and our country. These grants are intended to complement other Army and University scholarships by providing funds to offset costs for each area: room and board, out-of-state tuition, and first-year expenses for Army ROTC scholarship winners.

Up to ten (10) $1,000 Leadership Grants are available each year. These grants are awarded to students who meet the following criteria: scholarship winners and any full-time student enrolled in the ARMY ROTC program. Recipients of these Leadership Grants will be determined by the Professor of Military Science and Tactics who will evaluate each candidate in the following areas: ACT/SAT scores; 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 receive a service for which he or she is assigned.

Extra Curricular Activities Numerous military-related activities are available to cadets on and off campus, including the Tennessee Rangers, Scabbard and Blade, UT Color Guard, and Drill Team. These organizations provide both student and public contact and opportunities for further specialized military skills. Additionally, each term, a number of Field Training Exercises are conducted to develop military skills as Small Unit Tactics. Physical Fitness Training The Citadel Battalion conducts physical fitness training Monday-Wednesday-Friday from 6:00 a.m. to 7:00 a.m. The training is designed to improve physical strength, and cardiovascular endurance. Any UT student may take the course by registering for Army Conditioning Program 130.

LEADERSHIP GRANT PROGRAM

The University of Tennessee ROTC Leadership Grants are designed to attract and retain high quality candidates to the Army ROTC program for future positions of leadership within their service and our country. These grants are intended to complement other Army and University scholarships by providing funds to offset costs for each area: room and board, out-of-state tuition, and first-year expenses for Army ROTC scholarship winners.

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Basic Military Studies - Practicum

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<tr>
<td>Reserve</td>
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<td>Officer Training</td>
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<tr>
<td>Military Studies 400</td>
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</table>

Total: 8 hours

Variations to these sequences of study may be approved by the Professor of Military Science on a case-by-case basis. Lower division credit hours granted by the University for military service are dependent upon time spent in service and service schools attended.

**PROGRESSION REQUIREMENTS**

1. Minimum semester hours/GPA for entrance into Basic Military Studies - Practicum (Military Science 200): 30 semester hours/2.00 GPA.
2. Minimum overall GPA for entrance into the advance course (Military Science 310, 320, 410, 420, 430): 2.00.
3. Minimum GPA in Military Science Courses: 2.00.
4. Minimum overall GPA for commissioning: 2.00.
5. Semester counseling sessions with military advisor required for Advance Course and scholarship students only.

**DEPARTMENT OF AIR FORCE**

AIR FORCE ROTC PROGRAM

Professor of Air Force Aerospace Studies: Colonel Ryan Paradis (Head), M.S University of Arkansas.

Assistant Professors: Major Arthur Banner, M.A. Webster University; Captain James McCombs, Ph.D. University of Dayton; Captain Stephen Hunter, M.A. St. Mary's University.

**PURPOSE**

The Air Force Reserve Officers Training Corps (AFROTC) is an educational program designed to provide the college student an opportunity to earn an Air Force commission as a Second Lieutenant while completing the University requirements for a bachelor’s degree. The program provides education that will develop the skills and attitudes vital to the profession of arms. Upon successful completion of the AFROTC program, graduates are commissioned as Second Lieutenants. Following commissioning, all cadets are required to serve in the United States Air Force as Second Lieutenants. Field training opportunities are equal for men and women. Virtually all career fields in the Air Force are open to women, including pilot and navigator positions.

WOMEN IN AFROTC

AFROTC at the University of Tennessee has been a co-educational institution since 1970. Women complete the same courses as men and have the same opportunities. Upon successful completion of the AFROTC program, men and women are commissioned in the Air Force as Second Lieutenants. Field training opportunities are equal for men and women. Virtually all career fields in the Air Force are open to women, including pilot and navigator positions.

**SCHOLARSHIP PROGRAM**

Air Force ROTC Scholarships are available to qualified sophomores and seniors throughout the Four-Year and Two-Year Programs. Each scholarship provides full tuition, laboratory and incidental fees, and book fees. In addition, scholarship cadets receive a non-taxable $150 stipend each month during the school year while on scholarship.

**LEADERSHIP GRANT PROGRAM**

The University of Tennessee AFROTC Leadership Grants are designed to attract and retain high quality students in the Air Force ROTC program for future positions of leadership within their service and career. These grants are intended to complement other AFROTC and University scholarships by providing funds to offset costs for each cadet as needed. Each scholarship recipient will receive a grant of up to $1,000 per academic year and is subject to change.

**PAY AND ENTITLEMENTS**

All cadets enrolled in AFROTC are furnished free textbooks and laboratory fees as well as any other costs associated with their educational pursuits. In addition, all cadets receive a non-taxable $150 stipend each month while on scholarship.

**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 three years of active duty after completion of pilot training. Those graduates going into technical or ground duties will be required to serve four years of active duty. This information is subject to change. For the most current 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 4- or 6-week Field Training encampment or receive credit for the following courses. Attendance at a 4- or 6-week Field Training encampment is mandatory to all cadets and sophomores level course requirements.
Course | Hours/Credit  
--- | ---  
**Freshman**  
Aerospace Studies 101, 102 | 1,1  
Aerospace Studies 103, 104 | 1,1 (Lab)  
**Sophomore**  
Aerospace Studies 201, 202 | 1,1  
Aerospace Studies 202, 204 | 1,1 (Lab)  
**Junior**  
Aerospace Studies 301, 302 | 3,3  
Aerospace Studies 303, 304 | (Lab)  
**Senior**  
Aerospace Studies 401, 402 | 3,3  
Aerospace Studies 403, 404 | (Lab)  

**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. Some of these programs are:

- **Academy Freefall Parachute Training**: A 12-day program conducted at the US Air Force Academy—successful completion of program results in 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**: A 24-day program at Fort Benning, Georgia.
- **Army Airborne Training**: A 24-day program at Fort Benning, Georgia.
- **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 USAF Medical Center, Lackland AFB Texas, nursing cadets receive hands-on experience and practical knowledge of Air Force nursing.
- **Operation Air Force**: A three-week program conducted at Air Force installations throughout the United States and overseas.
- **Pentagon Internship Program**: A three-week program to provide cadets an opportunity to work in the Pentagon. Students selected for the program gain problem-solving experience working with both military and civilian personnel on real world issues and participate as a team member with professionals in their chosen field of study.
Advanced Studies

THE COLLEGE OF LAW

Thomas C. Galligan, Jr., Dean
John Sobieski, Jr., Associate Dean

The College of Law has, since 1890, continuously sought to provide high-quality legal education in a University community. The College offers a professional curriculum leading to the degree of Doctor of Jurisprudence. Two dual-degree programs are available in conjunction with the College of Law: the J.D./M.B.A. program with the College of Business Administration and J.D. and A.M.P. 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, 1020 W. Cumberland Avenue, Knoxville, Tennessee 37996-1810. Completed applications should be received before February 1 of the year of requested admission.

COLLEGE OF VETERINARY MEDICINE

Michael Shires, Dean
James J. Brace, Associate Dean

The College of Veterinary Medicine, established in 1974, offers a professional curriculum leading to the degree of Doctor of Veterinary Medicine (D.V.M.). The college offers graduate studies leading to the degree of Master of Science (M.S.) and Doctor of Philosophy (Ph.D.) with a major in Comparative and Experimental Medicine. Residency training programs in the various clinical specialties are also offered.

The Graduate Catalog contains complete information concerning the programs in the college. Forms and instructions for applying for admission may be obtained beginning July 1 from the Office of the Associate Dean, The University of Tennessee, Knoxville, College of Veterinary Medicine, P.O. Box 1071, Knoxville, Tennessee 37991-1071. Applications must be received by the Veterinary Medical College Application Service (VMCAS) by November 1 of the year prior to requested admission. All pre-veterinary requirements must be completed by the end of the spring term of the year in which the student plans to enroll in the college.

THE GRADUATE SCHOOL

C.W. Minkel, Associate Vice Chancellor and Dean of The Graduate School
Jen Allen, Assistant Dean of The Graduate School
Michael W. Singletary, Associate Dean of The Graduate School
Diana Lopez, Director, Graduate Admissions and Records
S. Kay Reed, Assistant to the Dean

The University of Tennessee is the official land-grant institution for the State of Tennessee with its main campus in Knoxville. UT Knoxville is the state's largest and most comprehensive institution, and is the only state-supported "Research University I" (Camrige Classification) in Tennessee. A wide range of graduate programs leading to the Master's and doctoral degrees is available. The University offers Master's programs in 76 fields of specialization and doctoral work in 45. Approximately 6,000 graduate students are enrolled, both on and off campus.

The Graduate School administration develops procedures to implement policies formulated by the Graduate Council, and has primary responsibility for Graduate School admissions and records. Much of the day-to-day administration of graduate study is conducted by department heads or faculty advisors and committees responsible for particular programs. In addition to departmental units, numerous interdisciplinary programs, institutes and centers have been developed on campus and in locations throughout the state. The Graduate School brings together faculty and graduate students as a community of scholars with a common interest in creative work and academic study. Graduate programs are available to students desiring full-time study toward the Master's and doctoral degrees or professional certification, those interested in continuing education for updating and broadening knowledge, and those pursuing predoctoral research.

Complete information concerning graduate study at The University of Tennessee, Knoxville, is available in the Graduate Catalog published annually. For a copy, write or visit the Office of Graduate Admissions and Records, 218 Student Services Building, The University of Tennessee, Knoxville, Tennessee 37996-0200 or call 974-3281, FAX 974-6541. Email: GSINFO@UTK.EDU; Website: HTTP://WEB.UTK.EDU/-GSINFO.
### Majors and Degree Programs

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<tr>
<td>Child and Family Studies</td>
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<td>Health Promotion and Health Education</td>
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<tr>
<td>Human Ecology</td>
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<td>Human Resource Development</td>
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<td>Nutrition</td>
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<td>Public Health</td>
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<td>Recreation, Tourism, &amp; Hospitality Management</td>
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<td>Safety Education and Service</td>
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<td>Textiles, Retailing and Consumer Sciences</td>
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<tr>
<th>College of Law</th>
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<td>J.D., J.D.-M.B.A., J.D.-M.P.A.</td>
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<tr>
<th>College of Nursing</th>
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<tr>
<td>Nursing</td>
<td>M.S.N., Ph.D.</td>
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<th>College of Social Work</th>
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<td>Social Work</td>
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<th>College of Veterinary Medicine</th>
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<td>Veterinary Medicine</td>
<td>D.V.M.</td>
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<th>School of Information Sciences</th>
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<td>Information Sciences</td>
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Continuing Studies and Distance Education is the administrative unit of UT Knoxville that extends academic courses, educational services, and other programs to the non-traditional student. While most people who participate in the programs are adults, persons of all ages and academic levels can be counted among the people who enroll in the credit and non-credit offerings of the Division.

Programs and courses are based on student needs and interests, whether for self-motivated learning, for leisure and nontraditional programs, or for professional promotion, certification, licensing, reorientation, or mid-career change. The Division provides these educational opportunities through program coordination and development of four departments: Department of Conferences, Department of Distance Education and Independent Study, English Language Institute, and UT Community Programs. Specific programs and services of each department are described on the following pages.

The Administrative Systems Office provides technical support services to the Division, its academic associates and clients. Area of support include Information Management, Marketing and Public Relations and Telecommunications and Media.

E-mail: outreach@utk.edu
Website: http://www.outreach.utk.edu

DEPARTMENT OF CONFERENCES
Director: Norvel Burkett, Ed.D. Mississippi State University
Assistant Director: Robert Gibos, B.S. Tennessee
Program Manager: Barbara Beiler
Conference Specialists: Susan Davis, B.S. Tennessee
Margaret Harris
Heather Huaxay, M.S. Tennessee
Barry Naut, B.S. Tennessee

UT Conferences, housed in the Conference Center Building downtown Knoxville, provides management services to UT departments and faculty or outside groups who desire to hold a high quality conference or meeting anywhere in Tennessee or across the United States.

Utilizing the Conference Center, major hotels and convention centers across Tennessee, and the U.S., UT Conferences assists organizers in designing and managing programs to meet the needs of meeting 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, lodging, food services, audiovisual, promotion 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 Division.

Professional groups and interested individuals can request interactive videoconferencing to locations worldwide. Arrangements can also be made to receive (downlink) programming or transmit (uplink) programming via satellite.

Additional information may be obtained from UT Conferences, P.O. Box 2648, Knoxville, TN 37901, or by calling (423) 974-0250, FAX (423) 974-0264.
E-mail: conferences@utk.edu
Website: http://www.outreach.utk.edu/conferences

ENGLISH LANGUAGE INSTITUTE
Director: Dale A. Myers, Ph.D. Florida
Assistant Director: Jan S. Hill, M.S. Tennessee
Instructors: Anwar F. Accawi, M.Ed., Tennessee
Mostafa Rahbar, M.Ed., Tennessee

The English Language Institute (ELI) is a non-credit language study program of The University of Tennessee, Knoxville. It is designed to assist students in their pursuit of career goals or educational objectives in the United States.

The ELI offers intensive courses for the improvement of student skills in the English language. International students, visitors, and professionals have successfully learned English through study in the ELI.

The courses emphasize the development of communicative ability in listening, speaking, reading, and writing. Faculty members are trained in teaching English to speakers of other languages with differing national backgrounds and varying proficiency in English.

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

Students must 3-5 periods each day with emphasis on the following:

- English Structure (Grammar)
- Listening/Comprehension (Rhetoric)
- Conversation Practice for Communicative Purposes
- Reading and Vocabulary

In addition, classes also assist students in pronunciation, test-taking strategies, U.S. culture orientation, and intensity study skills.

Additional Information may be obtained at 907 Mountcastle Street; telephone (423) 974-3404, or by calling (423) 974-0250, FAX (423) 974-0264.
E-mail: eli@utk.edu
Website: http://www.outreach.utk.edu/ELI
UT COMMUNITY PROGRAMS
Acting Director: Norval Burdett, B.S., Mississippi State University
Assistant Director: Nissi Dahl-Brown, M.S., Tennessee University

The Department of Distance Education and Independent Study, in concert with academic departments at UT, offers interactive teleclasses for students at specialty-equipped classrooms throughout Tennessee. Teleclass students participate actively with the instructor in Knoxville and similar classes elsewhere. Graduates in several UTK disciplines are offered through this advanced technology. Videoconferencing and web courses are also available at a variety of sites in Tennessee and elsewhere. Teleclass students pursuing advanced degrees at distant locations. For information and registration forms, contact the Distance Education Program at (423) 974-9331 or (800) 325-8557 or send e-mail to DE@ratk.utk.edu.

Independent Study
Coordinator: Marilyn W. Steward, Ph.D. Illinois

This department also administers the program of independent study by correspondence for all campuses of the University. This program includes college credit courses, high school courses, and college courses. Credit correspondence courses are based on regular UTK campus courses, and the credit is recorded on the student’s UTK transcript. High school courses are based on the curriculum frameworks of the Tennessee Department of Education. Non-credit correspondence courses can be taken to meet professional or educational goals. The courses utilize teleclasses and audiovisuals as well as traditional print materials. Through this program, the University of Tennessee is able to overcome geographic limitations in performing its services as Tennessee’s land-grant institution of higher education. This program is open to UT students and to anyone who has the educational preparation required for a particular course. UT students must have the approval of their college advising center before they enroll in college credit courses. The cooperation of a UT instructor, independent study through distance readings may also be arranged through this department for courses not listed in the Independent Study catalog. For information and enrollment forms for correspondence courses, contact the Department of Distance Education and Independent Study, 1534 White Ave., Room A119, The University of Tennessee, Knoxville, TN 37996-1525. Telephone: (423) 974-5134 or (800) 670-9690. E-mail: IndependentStudy@utk.edu

URL: http://www.outreach.utk.edu/deis

The following correspondence courses are offered through the Department of Distance Education and Independent Study. For full course descriptions refer to the listings in this Undergraduate Catalog.

Accounting 201: Principles of Financial Accounting 202 Principles of Managerial Accounting

Agribusiness 311: Introduction to Agricultural Economics 470 Natural Resource Economics

Anthropology 110 Human Origins 130 Cultural Anthropology

Child and Family Studies 240 Human Sexuality 312 Families in Middle and Later Adulthood

English 101 English Composition 102 English Composition 200 English Literature 1 201 Introduction to British Literature and 202 British Literature II 300 World to the Present 322 American Literature II Civil War to the Present 263 Introduction to Creative Writing 265 Introduction to Shakespeare 369 Literature of the English Bible

Forestry 301 Wildlife and Fisheries 219 Introduction to Forestry 300 Wildlife and Fisheries


Philosophy 345 Medical Ethics 346 Medical Ethics 350 Political Science 101 United States Government and Politics 374 American Political


Safety 432 General Safety


Spanish 111 Elementary Spanish, First Semester 112 Elementary Spanish, Second Semester 211 Intermediate Spanish, First Semester 212 Intermediate Spanish, Second Semester

Continuing Studies and Distance Education 159
415 Governmentaland NonprofitAccounting(3)Advancedstudyofgovernmentalandnonprofitentities.

414 Non BusinessEntities: Acquisitions; Mergers; and TransactionswithForeignentities; TransactionswithForeignentities; TransactionswithForeignentities; TransactionswithForeignentities; TransactionswithForeignentities; TransactionswithForeignentities; TransactionswithForeignentities; TransactionswithForeignentities; TransactionswithForeignentities; TransactionswithForeignentities; TransactionswithForeignentities; TransactionswithForeignentities; TransactionswithForeignentities; TransactionswithForeignentities; TransactionswithForeignentities; TransactionswithForeignentities; TransactionswithForeignentities; TransactionswithForeignentities; TransactionswithForeignentities; TransactionswithForeignentities; TransactionswithForeignentities; TransactionswithForeignentities; TransactionswithForeignentities; TransactionswithForeignentities; TransactionswithForeignentities; TransactionswithForeignentities; TransactionswithForeignentities; TransactionswithForeignentities; TransactionswithForeignentities; TransactionswithForeignentities; TransactionswithForeignentities; TransactionswithForeignentities; TransactionswithForeignentities; TransactionswithForeignentities; TransactionswithForeignentities; TransactionswithForeignentities; TransactionswithForeignentities; TransactionswithForeignentities; TransactionswithForeignentities; TransactionswithForeignentities; TransactionswithForeignentities; TransactionswithForeignentities; TransactionswithForeignentities; TransactionswithForeignentities; TransactionswithForeignentities; TransactionswithForeignentities; TransactionswithForeignentities; TransactionswithForeignentities; TransactionswithForeignentities; TransactionswithForeignentities; TransactionswithForeignentities; TransactionswithForeignentities; TransactionswithForeignentities; TransactionswithForeignentities; Transactionsw
401-402. Leadership (LAB) (3,3) This course is designed to provide students with an understanding of the role of leadership in contemporary society. It covers topics such as leadership theory, group dynamics, and decision-making processes. This course is mandatory for all students.

201-202. The Development of American Society (HIS) (3,3) This course explores the development of American society from pre-Columbian times to the present. It covers political, social, and cultural developments, as well as the impact of various historical events and figures. This course is mandatory for all students.

101-102. Orientation to Animal Science (1) This course provides an introduction to animal science for majors and non-majors in their first year. It includes an overview of the field, its importance, and the various career options available. This course is mandatory for all students.

280. Farm Animal Management Practices (3) This course covers the integration of herd/flock management practices into cattle, horse, poultry, sheep, and goat production systems. It includes topics such as environmental management, nutrition, and disease control. This course is mandatory for all students.

220. Anatomy and Physiology of Farm Animals (3) This course covers the anatomy and physiology of farm animals, including the skeletal, muscular, nervous, endocrine, digestive, respiratory, and reproductive systems. It is mandatory for all students.

230. Anatomy and Physiology of Farm Animals (3) This course covers the anatomy and physiology of farm animals, including the skeletal, muscular, nervous, endocrine, digestive, respiratory, and reproductive systems. It is mandatory for all students.

240. Principles of Animal Breeding (3) This course covers the principles of animal breeding, including genetic selection, artificial insemination, and genetic diversity. It is mandatory for all students.

250. Animal Nutrition, Feeds, and Ration Formulation (3) This course covers the principles of animal nutrition, feeds, and ration formulation. It includes topics such as feed evaluation, feed formulation, and feed preservation. This course is mandatory for all students.

260. Farm Animal Evaluation (3) This course covers the evaluation of farm animals, including beef cattle, dairy cattle, swine, sheep, and horses. It includes topics such as conformation, breed classification, and economic evaluation. This course is mandatory for all students.

270. Animal Behavior (3) This course covers the behavior of farm animals, including social behavior, learning, and motivation. It includes topics such as communication, stress, and welfare. This course is mandatory for all students.

280. Farm Animal Management Practices (3) This course covers the integration of herd/flock management practices into cattle, horse, poultry, sheep, and goat production systems. It includes topics such as environmental management, nutrition, and disease control. This course is mandatory for all students.

290. Animal Nutrition, Feeds, and Ration Formulation (3) This course covers the principles of animal nutrition, feeds, and ration formulation. It includes topics such as feed evaluation, feed formulation, and feed preservation. This course is mandatory for all students.

300. Animal Health Management (3) This course covers the management of animal health, including disease prevention, treatment, and control. It includes topics such as immunization, health regulations, and herd health programs. This course is mandatory for all students.

310. Animal Breeding (3) This course covers the principles of animal breeding, including genetic selection, artificial insemination, and genetic diversity. It is mandatory for all students.

320. Animal Nutrition, Feeds, and Ration Formulation (3) This course covers the principles of animal nutrition, feeds, and ration formulation. It includes topics such as feed evaluation, feed formulation, and feed preservation. This course is mandatory for all students.

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370. Animal Breeding (3) This course covers the principles of animal breeding, including genetic selection, artificial insemination, and genetic diversity. It is mandatory for all students.
Alumni: 310.

288 American Studies (3) Anthropology in the study of human identity, culture, and social relations, including cultural relativism, power structures, etc. Writing emphasis.

289 Native American Cultures (3) Cultural and social history of North America, including Native American cultures and their environments. Writing emphasis.

290 Historical Anthropology Laboratory (2) Laboratory course for the study of mathematical models in anthropological research. Prerequisites: MATH 170 and consent of instructor. May be repeated. 4 credits.

291 Cultural Ecology (3) Ecological theory and its relationship to human cultural systems. Prerequisites: 120 or 130, 310, and consent of instructor.

292 Independent Study In Animal Science (1-2) Approved independent study in areas not formally presented in courses. 2 hours.

293 Independent Study In Animal Science (1-2) Approved independent study in areas not formally presented in courses. 2 hours.

294 Independent Study In Animal Science (1-2) Approved independent study in areas not formally presented in courses. 2 hours.

295 Project in Animal Science (1-6) Supervised study in areas not normally presented in courses. Prerequisites: consent of instructor. 6 hours.

296 Thesis (1-6) Research and preparation of theses. Prerequisites: 300 and consent of instructor. 6 hours.

297 Dissertation (1-6) Research and preparation of a dissertation. Prerequisites: 300 and consent of instructor. 6 hours.

ANTHROPOLOGY (122)

101 Introduction to Anthropology (3) An introduction to the study of man, with emphasis on the physical, cultural, and language aspects of human behavior. 3 hours.

102 Prehistoric Archaeology (3) Introduction to the study of prehistoric man, including prehistoric cultures, methods of dating, and the use of artifacts and materials. 3 hours.

103 Cultural Anthropology (1-6) An introduction to the study of cultural differences and similarities among human societies, with emphasis on the study of social, economic, and political organization. Prerequisites: consent of instructor. 6 hours.

106 Advanced Anthropology (1-6) Advanced study in specific areas of anthropology. Prerequisites: consent of instructor. 6 hours.

107 Seminar (1-6) Seminar course in specific areas of anthropology. Prerequisites: consent of instructor. 6 hours.

120 Prehistoric Archaeology (3) Introduction to the study of prehistoric man, including prehistoric cultures, methods of dating, and the use of artifacts and materials. 3 hours.

121 Cultural Anthropology (1-6) An introduction to the study of cultural differences and similarities among human societies, with emphasis on the study of social, economic, and political organization. Prerequisites: consent of instructor. 6 hours.

122 Advanced Anthropology (1-6) Advanced study in specific areas of anthropology. Prerequisites: consent of instructor. 6 hours.

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134 Advanced Anthropology (1-6) Advanced study in specific areas of anthropology. Prerequisites: consent of instructor. 6 hours.

135 Seminar (1-6) Seminar course in specific areas of anthropology. Prerequisites: consent of instructor. 6 hours.
### 101 Introduction to the Built Environment (3)

Introduction to the built environment in relation to contemporary society, building industry, and allied design professions. Architecture design as a creative process. Development of a course and program of the school. Coreq: 171 F.

#### 111 Architecture and the Built Environment (3)

An introduction to architecture and the built environment for non-architecture majors. Significance of our environment, its function, and flow. Corequisite: design experience. Strategies for individual and collective involvement. 

#### 212 History and Theory of Architecture II (3)

Architectural thought and ideas of building and community from the English Renaissance, late Renaissance in Italy, France and Spain through to the beginning of the twentieth century. Prereq: 211. Sp.

#### 215 Architectural History/Theory I (3)

Introduction to architectural form, ideas, and traditions in a lecture/discussion format. Prereq: M. Arch Admission.

#### 216 Architectural History/Theory II (3)

Architectural thought and ideas of building and community from the English Renaissance, late Renaissance in Italy, France and Spain through to the beginning of the twentieth century. Prereq: 211. Sp.

#### 272 Architectural Design I (6)

Studies in architectural space. The role of habitability, function, atmosphere, structure and scale as determinants of spatial form exposed through a series of design projects ranging from scale models to final drawings. Developmental design processes, including analytical, axiomatic, diagramming, and determining spatial and structural strategies. Use of computer-aided visualization techniques. 

#### 281 Principles of Architectural Form I (3)

Principles of architectural form in relation to building configuration and context. Design of simple structures of steel, wood and concrete based on specific loading requirements. Use of construction and building codes, material science and design techniques - selection of structural systems. 

#### 403 Introduction to Preservation (3)

History, theory, and broad aspects of architectural preservation and rehabilitation. 

#### 404 Preservation Technology (3)


#### 405 Descriptive Analysis of Historic Buildings (3)

Identification and analysis of characteristic elements of buildings from various architectural periods, with emphasis on American architecture. Survey techniques. 

#### 406 Principles of Environmental Control II (3)

Introduction to heating, ventilating, and air-conditioning systems, including passive and active solar energy systems. Plumbing and fire protection systems. Prereq: 231 and 232. F.

#### 462 Early European Prehistory (3)

Origins and evolution of human culture in Europe through the beginning of settled life. Primary focus on Paleolithic/Mesolithic chronology and lifeways. Prereq: 120 or consent of instructor. Writing emphasis course.

#### 463 Rise of Complex Societies in Africa, Europe, and Asia (3)

The origins and evolution of human societies and lifeways in Africa, Europe, and Asia. Prereq: 120 or consent of instructor. Writing emphasis course.

#### 465 Urban Archaeology (3)

Field archaeology and interpretation of archaeological remains on historic urban sites in the United States. Course content will include site excavation and field and laboratory research on six sites in East Tennessee. Prereq: 260 recommended.

### 481 Museology I: Museums, Purpose and Function (3)

Museums, purpose, and function. Design, development, and structure of museums. Coreq: lecture (4 credit hour course) and studio (4 credit hour studio).

#### 482 Museology II: Exhibition Planning and Installation (3)

Introduction to computers in design; software and hardware. Fundamentals of exhibition planning and installation. Introduction to drafting, three-dimensional modeling, and desktop publishing.

#### 483 Museology III: Field Projects (3)

Introduction to exhibition design and planning. Development of exhibition concepts and projects. 

#### 531 Environmental and Occupational Health (3)

Introduction to environmental and occupational health hazards, risks, and control. 

### 532 Advanced Architectural Structures I (3)

Philosophy and design in sustainable materials and systems. Development of environmental design, evaluation of use of computer-aided design tools. 

### 533 Architectural Form I (3)

Introduction to the design of buildings. Design and analysis of simple structures of steel, wood and concrete based on specific loading requirements. Use of construction and building codes, materials science and design techniques - selection of structural systems.

#### 541 Environmental Control Systems I (4)

Heating, ventilating, and air-conditioning systems, including passive and active solar energy systems. Plumbing and fire protection systems. Prereq: 231 and 232. F.

#### 543 Principles of Environmental Control II (3)

Introduction to electrical design and wiring, lighting and acoustics in buildings. Prereq: 180 and M. Arch Admission.

#### 544 Principles of Environmental Control III (3)

Introduction to heating, ventilating, and air-conditioning systems, including passive and active solar energy systems. Plumbing and fire protection systems. Prereq: 231 and 232. F.

#### 555 Introduction to Urban Design (3)

Development of urban form, ideas, and ideas in a studio format. Community and regional planning. 

#### 556 Principles of Urban Archaeology (3)

Architectural forms and ideas of building and community from the English Renaissance, late Renaissance in Italy, France and Spain through to the beginning of the twentieth century. Prereq: 211.

#### 571 Design Fundamentals I (3)

Fundamentals of visual composition, graphic and visual aids to communication. Prereq: 2 and 3 of Visual Communication: Image, Form, Space, Gestalt, and the Organization of Visual Experience, a graduate-level studio course. Prereq: 171. F.

#### 572 Design Fundamentals II (4)

Fundamentals of visual composition, graphic and visual aids to communication. Prereq: 2 and 3 of Visual Communication: Image, Form, Space, Gestalt, and the Organization of Visual Experience, a graduate-level studio course. Prereq: 171. F.

### 581 Architectural Design IV (6)


#### 591 Architectural Design V (6)

Philosophy and design in sustainable materials and systems. Development of environmental design, evaluation of use of computer-aided design tools.

### 601 Architectural Design VI (6)

Philosophy and design in sustainable materials and systems. Development of environmental design, evaluation of use of computer-aided design tools.
ART EDUCATION (141)
301 Foundation of Art Education (3) Basic philosophy and educational strategies in the development and administration of art education programs in grades K-12. 4-hour lecture and laboratory experience. Prereq: Art History 172 and 173 with a grade of C or better.
302 Art Education Seminar (1-3) Practicums in art education. Prereq: Consent of instructor. May be repeated. Maximum 8 hours.

ART HISTORY (139)
325 Themes and Movements in Western Art with emphasis on Europe from prehistory through the Middle Ages. Three-hour lecture, two-hour discussion section each week.
375 Western Art (3) Major movements in the history of Western European art from prehistory to the Middle Ages. Three-hour lecture, one-half hour discussion.

ART HISTORY (141)
301 Foundation of Art Education (3) Basic philosophy and educational strategies in the development and administration of art education programs in grades K-12. 4-hour lecture and laboratory experience. Prereq: Art History 172 and 173 with a grade of C or better.
302 Art Education Seminar (1-3) Practicums in art education. Prereq: Consent of instructor. May be repeated. Maximum 8 hours.

ART DRAWING (137)
201 Introduction to Studio Art: Visual Media (3) Visual problem solving in the context of studio art. Prereq: Consent of instructor. May be repeated. Maximum 12 hours.
211 Drawing I: Survey of Drawing (3) Fundamental aspects of drawing and their application to the study of visual problem-solving. Prereq: Consent of instructor. May be repeated. Maximum 12 hours.
213 Drawing III: Figure Drawing (8) Development of basic skills in figure drawing. Study of the human figure with emphasis on balance and expressiveness. Prereq: 212. May be repeated. Maximum 8 hours.
218 Drawing Portfolio Review (0) Review of portfolio. Prereq: Consent of instructor. May be repeated. Maximum 12 hours.
220 Special Topics in Drawing/Painting (1) Student or instructor initiated course offered as convenience of department to enhance and expand the painting, drawing, and sculpture programs. Prereq: 212 and 213 or consent of instructor. May be repeated. Maximum 6 hours. Total of 6 hours required for students in the Drawing concentration.
222 Reading Portfolio Review (0) Final portfolio review in drawing. Prereq: Consent of instructor prior to registration for senior and junior classes. Prereq: Art History 172 and 173 with a grade of C or better from previous semesters. Prereq: Consent of instructor.

ART PROGRAMS (142)
212 Drawing Portfolio Review (0) Review of portfolio. Prereq: Consent of instructor. May be repeated. Maximum 12 hours.
220 Special Topics in Drawing/Painting (1) Student or instructor initiated course offered as convenience of department to enhance and expand the painting, drawing, and sculpture programs. Prereq: 212 and 213 or consent of instructor. May be repeated. Maximum 6 hours. Total of 6 hours required for students in the Drawing concentration.
222 Reading Portfolio Review (0) Final portfolio review in drawing. Prereq: Consent of instructor prior to registration for senior and junior classes. Prereq: Art History 172 and 173 with a grade of C or better from previous semesters. Prereq: Consent of instructor.

ART HISTORY (141)
301 Foundation of Art Education (3) Basic philosophy and educational strategies in the development and administration of art education programs in grades K-12. 4-hour lecture and laboratory experience. Prereq: Art History 172 and 173 with a grade of C or better.
302 Art Education Seminar (1-3) Practicums in art education. Prereq: Consent of instructor. May be repeated. Maximum 8 hours.

ART HISTORY (139)
325 Themes and Movements in Western Art with emphasis on Europe from prehistory through the Middle Ages. Three-hour lecture, two-hour discussion section each week.
375 Western Art (3) Major movements in the history of Western European art from prehistory to the Middle Ages. Three-hour lecture, one-half hour discussion.

ART HISTORY (141)
301 Foundation of Art Education (3) Basic philosophy and educational strategies in the development and administration of art education programs in grades K-12. 4-hour lecture and laboratory experience. Prereq: Art History 172 and 173 with a grade of C or better.
302 Art Education Seminar (1-3) Practicums in art education. Prereq: Consent of instructor. May be repeated. Maximum 8 hours.

ART HISTORY (139)
325 Themes and Movements in Western Art with emphasis on Europe from prehistory through the Middle Ages. Three-hour lecture, two-hour discussion section each week.
375 Western Art (3) Major movements in the history of Western European art from prehistory to the Middle Ages. Three-hour lecture, one-half hour discussion.

ART HISTORY (141)
301 Foundation of Art Education (3) Basic philosophy and educational strategies in the development and administration of art education programs in grades K-12. 4-hour lecture and laboratory experience. Prereq: Art History 172 and 173 with a grade of C or better.
302 Art Education Seminar (1-3) Practicums in art education. Prereq: Consent of instructor. May be repeated. Maximum 8 hours.

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325 Themes and Movements in Western Art with emphasis on Europe from prehistory through the Middle Ages. Three-hour lecture, two-hour discussion section each week.
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ART HISTORY (141)
301 Foundation of Art Education (3) Basic philosophy and educational strategies in the development and administration of art education programs in grades K-12. 4-hour lecture and laboratory experience. Prereq: Art History 172 and 173 with a grade of C or better.
302 Art Education Seminar (1-3) Practicums in art education. Prereq: Consent of instructor. May be repeated. Maximum 8 hours.

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302 Art Education Seminar (1-3) Practicums in art education. Prereq: Consent of instructor. May be repeated. Maximum 8 hours.

ART HISTORY (139)
325 Themes and Movements in Western Art with emphasis on Europe from prehistory through the Middle Ages. Three-hour lecture, two-hour discussion section each week.
375 Western Art (3) Major movements in the history of Western European art from prehistory to the Middle Ages. Three-hour lecture, one-half hour discussion.

ART HISTORY (141)
301 Foundation of Art Education (3) Basic philosophy and educational strategies in the development and administration of art education programs in grades K-12. 4-hour lecture and laboratory experience. Prereq: Art History 172 and 173 with a grade of C or better.
302 Art Education Seminar (1-3) Practicums in art education. Prereq: Consent of instructor. May be repeated. Maximum 8 hours.

ART HISTORY (139)
325 Themes and Movements in Western Art with emphasis on Europe from prehistory through the Middle Ages. Three-hour lecture, two-hour discussion section each week.
375 Western Art (3) Major movements in the history of Western European art from prehistory to the Middle Ages. Three-hour lecture, one-half hour discussion.
2016 courses are listed for the art majors. Courses of Instruction

453 Art of Southern Europe: 1575-1700 (3) Concentrates on the visual arts and architecture of Southern Europe, with a focus on the development of naturalism. Revival of antiquity and development of landscape, the works of Bruegel, Rubens, Rembrandt, Georges de la Tour, and artists from the Baroque period. Writing emphasis. (Same as Medieval Studies 371 and Judaic Studies 425.)

451 The Art of Italy, 1250-1450 (3) Development of exploration of naturalism. Revival of antiquity and development of landscape. Writings on individual works of art in light of contemporary writings by artists and theorists. Prereq: 172 and 173 (or their equivalents). May be repeated for a maximum of 6 hours. Writing emphasis.

474 Theory of 20th-Century Art in Europe and America (3) Emphasis on France: Neo-classicism, Romanticism, and Impressionism. Introduction to the development of modern art. Prereq: 471 and permission of instructor. Writing emphasis. (Same as Cinema Studies 330 and Judaic Studies 425.)

476 History of 20th-Century Painting and Sculpture in Europe (3) Cezanne, Van Gogh, Gauguin, Synthetism, Dadaism,Expressionism, Cubism, Pop, Constructivism, De Stijl and Surrealism, social comment, conceptual art. Writings on individual works of art and theory. Prereq. Creative writing emphasis. (Same as Cinema Studies 330 and Judaic Studies 425.)

479 Special Topics in Art History (3) Student or instructor initiated course offered at convenience of department. May be repeated. Maximum 12 hours.

491 Introduction to Studio Art: Various Media (3) Individual sections for various artistic disciplines. For Non-majors only. Courses may be repeated, medium may not be repeated. Maximum 12 hours.

221 Photography (3) Art of black and white photography. Print and studio setting, history of photography, black and white processing. Prereq: 235 and 236 or consent of instructor. Writing emphasis. (Same as Cinema Studies 235.)

235 Introduction to Cinematography as Art (3) Development of basic concepts and techniques for the creation of film as an art form. Prereq. Cinema Studies 231 or consent of instructor. (Same as Cinema Studies 235.)

233 History of Modern Art and Film (3) Study of the development and interaction between film as a visual art and modern art. Available for Art History credit. Prereq: History 172 and 173 with a grade of C or better. Satisfaction Credit/No Credit only.

315 Painting I (4) Individual development of original ideas in painting on canvas. Prereq: 214 and 314 or consent of instructor. May be repeated. Maximum 12 hours.

313 Painting II (4) Individual development of original ideas in painting on canvas. Prereq: 214 and 314 or consent of instructor. May be repeated. Maximum 12 hours.

311 Painting III (4) Advanced painting with individual ideas and personal approaches in the visual arts within the context of modern art history. Available for Art History credit. (Same as Cinema Studies 435.)

312 Painting IV (4) Individual development of original ideas in painting and sculpture. Prereq: 311 and 312. May be repeated. Maximum 12 hours.

314 Large Format Photography I (4) Studio course introducing historical and technical aspects of large format photography. Prereq: 101, 103 for art majors, none for non-art majors. May be repeated. Maximum 12 hours.


316 Watercolor II (3) Concentrations in water-based media on paper. Prereq: 216 and 316 or consent of instructor. May be repeated. Maximum 12 hours. Total of 8 hours required for students in the Watercolor concentration.

317 Watercolor III (3) Individual development with varied media on paper stressing personal concepts and personal approaches. Prereq: 316. May be repeated. Maximum 12 hours.

318 Watercolor IV (6) Advanced watercolor stressing individual concepts and personal approaches. Prereq: or Coreq: 316 or consent of instructor. (Same as Cinema Studies 235.)

319 Introduction to Studio Art: Various Media (3) Individual sections for various artistic disciplines. For Non-majors only. Courses may be repeated, medium may not be repeated. Maximum 12 hours.

415 Chinese Art (3) Survey from pre-Shang Dynasty to the modern era. Writings on individual works of art. Successional completion required prior to registration for junior and senior courses. Prereq. Creative writing emphasis. (Same as Cinema Studies 335.)

411 Artof Indian Asia (3) History of Indianart with special attention to Velazquez. Writings on individual works of art in light of contemporary writings by artists and theorists. Prereq: 236 and 330, or permission of instructor. May be repeated. Maximum 12 hours.

417 Asian Art (3) Art of Central and Southeast Asia. Writings on individual works of art. Successional completion required prior to registration for junior and senior courses. Prereq. Creative writing emphasis. (Same as Cinema Studies 335.)

413 History of North American Art (3) Survey of major artistic developments and landmarks in painting, architecture, sculpture, and design with special attention to Velazquez. Writings on individual works of art in light of contemporary writings by artists and theorists. Prereq: 236 and 330, or permission of instructor. May be repeated. Maximum 12 hours.

415 Watercolor IV (6) Advanced painting with water-based media on paper stressing personal concepts and personal approaches. Prereq: 316. May be repeated. Maximum 12 hours. Total of 8 hours required for students in the Watercolor concentration.

421 Photography II (3) Art of black and white photography. Print and studio setting, history of photography, black and white processing. Prereq: 235 and 236 or consent of instructor. Writing emphasis. (Same as Cinema Studies 235.)

423 Large Format Photography II (4) Studio course that continues the exploration of the use of large format equipment in photography. Prereq: 342 and permission of instructor. Prerequisites: 338 and permission of instructor. Writings on individual works of art. Satisfaction Credit/No Credit only.

425 Early Christian and Byzantine Art to 1350 (3) Art in Italy and the Eastern Empire from the beginning of Christian art to 1350. mosaic and painting, sculpture and architecture. Writings on individual works of art. Prereq: 172 and 173 (or their equivalents). Satisfaction Credit/No Credit only.

431 Photography III (3-6) Individual development of original ideas in painting on canvas. Prereq: 315. May be repeated. Maximum 12 hours.

435 Cinematography as Art (3) Continuation of development of concepts and techniques for the creation of film as an art form. Prereq. Cinema Studies 231 or consent of instructor. (Same as Cinema Studies 235.)

433 History of Modern Art and Film (3) Study of the development and interaction between film as a visual art and modern art. Available for Art History credit. Prereq: History 172 and 173 with a grade of C or better. Satisfaction Credit/No Credit only.

494 Individual Problems (3) Prereq. Consent of instructor. May be repeated. Maximum 12 hours.

495 Visiting Artist Seminar (3) Study and discussion of contemporary art issues conducted by different visiting artists each semester. May be repeated. Maximum 12 hours. (Does not apply toward art history requirement.)

498 Independent Study (1-15) Prereq: Consent of instructor. May be repeated. Maximum 12 hours.

499 Individual Problems (3) Prereq. Consent of instructor. May be repeated. Maximum 12 hours.

411 Introduction to Studio Art: Various Media (3) Individual sections for various artistic disciplines. For Non-majors only. Courses may be repeated, medium may not be repeated. Maximum 12 hours.

471 History of 20th-Century Painting and Sculpture in Europe (3) Cezanne, Van Gogh, Gauguin, Synthetism, Dadaism,Expressionism, Cubism, Pop, Constructivism, De Stijl and Surrealism, social comment, conceptual art. Writings on individual works of art and theory. Prereq. Creative writing emphasis. (Same as Cinema Studies 330 and Judaic Studies 425.)

422 Large Format Photography III (4) Studio course that continues the exploration of the use of the large format equipment in photography. Prereq: 342 and permission of instructor. Prerequisites: 338 and permission of instructor. Writings on individual works of art. Satisfaction Credit/No Credit only.

Courses of Instruction

167
291 Introduction to Studio Art: Various Media (3) Non-majors only. Consent may be required, medium work in plastics, materials and techniques including clay modeling, plastic medium for two- and three-dimensional art. Includes dyeing, inlaying, casting, and other related techniques. May be repeated. Maximum 8 hours.

292 Intaglio 11 (4) Prereq: 362, or consent of instructor. May be repeated. Maximum 12 hours.

293 Mixed Media Sculpture I (3) Prereq: 6 hours of sculptural work in sculpture. Successful completion required prior to registration for juried and senior courses. May be repeated. Maximum 12 hours.

294 Studio Portfolio Review (2) Prereq: 6 hours of sculptural work in sculpture. Successful completion required prior to registration for juried and senior courses. May be repeated. Maximum 12 hours.

295 Independent Study (1-15) Prereq: Consent of instructor. May be repeated. Maximum 9 hours.

296 Art History 172 and 173 with a grade of C or better. May be repeated. Maximum 12 hours.

297 Mixed Media II (3) Further problems in sculptural use of two or more distinctive materials. May be repeated. Maximum 12 hours.

298 Special Topics in Sculpture (1-4) Prereq: 6 hours of sculptural work in sculpture. Successful completion required prior to registration for juried and senior courses. May be repeated. Maximum 12 hours.

299 Special Topics in Studio Art (1-4) Prereq: 6 hours of sculptural work in sculpture. Successful completion required prior to registration for juried and senior courses. May be repeated. Maximum 12 hours.

300-302 Advanced Studio Art (4, 5, 5) Prereq: 101 and determined by department. May be repeated. Maximum 18 hours.


305 Advanced II (3) Prereq: 304 and determined by department. May be repeated. Maximum 6 hours.

306 Fibers (2-4) Beginning to intermediate. May be repeated.

307 Wood (2-4) Beginning to intermediate. May be repeated.

308 Graphic Design (2-4) Intermediates to advanced. May be repeated.

309 Poster Design (2-4) Intermediates to advanced. May be repeated.

310 Wood (2-4) Intermediates to advanced. May be repeated.

311 Glass (2-4) Intermediates to advanced. May be repeated.

312-314 Advanced Chinese 1,2,3 (4,4,4) Prereq: 231-232 or equivalent of instructor. Must be taken in sequence.

315 Advanced Japanese 1,2,3 (4,4,4) Must be taken in sequence.

316-318 Elementary Chinese I,II,III (5,5,5) Must be taken in sequence.

319-321 Elementary Persian (4,4,4) Taped language program. Must be taken in sequence.

322-324 Mixed Media I (3) Prereq: 101 and determined by department. May be repeated. Maximum 6 hours.

325 Mixed Media II (3) Further problems in the sculptural use of two or more distinctive materials. May be repeated. Maximum 12 hours.

326 Mixed Media III (3) Further problems in the sculptural use of two or more distinctive materials. May be repeated. Maximum 12 hours.

327 Mixed Media IV (3) Further problems in the sculptural use of two or more distinctive materials. May be repeated. Maximum 12 hours.

328 Special Topics in Sculpture (1-4) Prereq: 6 hours of sculptural work in sculpture. Successful completion required prior to registration for juried and senior courses. May be repeated. Maximum 12 hours.

329 Special Topics in Sculpture (1-4) Prereq: 6 hours of sculptural work in sculpture. Successful completion required prior to registration for juried and senior courses. May be repeated. Maximum 12 hours.

330 Advanced Studio Art (4, 5, 5) Prereq: 101 and determined by department. May be repeated. Maximum 18 hours.

331-332 Advanced Chinese 1,2,3 (4,4,4) Prereq: 231-232 or equivalent of instructor. Must be taken in sequence.

333-335 Advanced Japanese 1,2,3 (4,4,4) Prereq: 231-232 or equivalent of instructor. Must be taken in sequence.

336-338 Advanced Chinese 1,2,3 (4,4,4) Prereq: 231-232 or equivalent of instructor. Must be taken in sequence.

339-341 Advanced Japanese 1,2,3 (4,4,4) Prereq: 231-232 or equivalent of instructor. Must be taken in sequence.

342 Life Sculpture I (3) Proctoring in clay, wax and plaster, working from figure. Modeling process as both observational and material handling technique. Prereq: 101, 103 or consent of instructor. May be repeated. Maximum 8 hours.

343 Life Sculpture II (4) Exploration of concepts and techniques in life sculpture. Prereq: 242 and 340 or consent of Instructor. May be repeated. Maximum 6 hours.

344 Life Sculpture III (3) Prereq: 243 and determined by department. May be repeated. Maximum 6 hours.

345 Steel Sculpture I (3) Prereq: 245 and determined by department. May be repeated. Maximum 6 hours.

346 Mixed Media Sculpture II (3) Further problems in the sculptural use of two or more distinctive materials. May be repeated. Maximum 12 hours.

347 Intaglio 11 (4) Exploration of concepts and techniques in intaglio through development of copper plates and soft ground etching. Prereq: 101, or course of student. May be repeated. Maximum 12 hours.

348 Special Topics in Studio Art (1-4) Prereq: 6 hours of sculptural work in sculpture. Successful completion required prior to registration for juried and senior courses. May be repeated. Maximum 12 hours.

349 Special Topics in Sculpture (1-4) Prereq: 6 hours of sculptural work in sculpture. Successful completion required prior to registration for juried and senior courses. May be repeated. Maximum 12 hours.

350 Advanced Studio Art (4, 5, 5) Prereq: 101 and determined by department. May be repeated. Maximum 18 hours.

351-352 Advanced Japanese I,II (4,4) Includes conversation in the program in Language and World Business. See Director for further information. Faculty from the Colleges of Business Administration and Arts and Sciences provide an overview of the value of language study and international cultural awareness and Arts and Sciences provide an overview of the value of language study and international cultural awareness at the local, state, and national levels. Interdisciplinary coursework necessary for foreign trade is taught in this course. Prereq: 101, or determined by department. May be repeated. Maximum 12 hours.

353-355 Advanced Chinese 1,2,3 (4,4,4) Prereq: 231-232 or equivalent of instructor. Must be taken in sequence.

356-358 Advanced Japanese 1,2,3 (4,4,4) Prereq: 231-232 or equivalent of instructor. Must be taken in sequence.

359-361 Advanced Chinese 1,2,3 (4,4,4) Prereq: 231-232 or equivalent of instructor. Must be taken in sequence.

362 Intaglio 11 (4) Exploration of concepts and techniques in intaglio through development of copper plates and soft ground etching. Prereq: 101, or course of student. May be repeated. Maximum 12 hours.

363 Life Sculpture I (3) Proctoring in clay, wax and plaster, working from figure. Modeling process as both observational and material handling technique. Prereq: 101, 103 or consent of instructor. May be repeated. Maximum 8 hours.

364 Life Sculpture II (4) Exploration of concepts and techniques in life sculpture. Prereq: 242 and 340 or consent of Instructor. May be repeated. Maximum 6 hours.

365 Steel Sculpture I (3) Prereq: 245 and determined by department. May be repeated. Maximum 6 hours.

366 Life Sculpture I (3) Proctoring in clay, wax and plaster, working from figure. Modeling process as both observational and material handling technique. Prereq: 101, 103 or consent of instructor. May be repeated. Maximum 8 hours.

367 Life Sculpture II (4) Exploration of concepts and techniques in life sculpture. Prereq: 242 and 340 or consent of Instructor. May be repeated. Maximum 6 hours.

368 Life Sculpture III (3) Prereq: 243 and determined by department. May be repeated. Maximum 6 hours.

369 Independent Study (1-15) Prereq: Consent of instructor. May be repeated. Maximum 9 hours.

370 Fibers (2-4) Beginning to intermediate. May be repeated.

371-373 Advanced Japanese 1,2,3 (4,4,4) Prereq: 231-232 or equivalent of instructor. Must be taken in sequence.

374-376 Advanced Chinese 1,2,3 (4,4,4) Prereq: 231-232 or equivalent of instructor. Must be taken in sequence.

377-379 Advanced Chinese 1,2,3 (4,4,4) Prereq: 231-232 or equivalent of instructor. Must be taken in sequence.

380 Special Topics in Studio Art (1-4) Prereq: Consent of instructor. May be repeated. Maximum 6 hours.

381 Drawing (2-4) Beginning to intermediate. May be repeated.

382 Ceramics (2-4) Beginning to intermediate. May be repeated.

383 Photography (0) Beginning to intermediate. May be repeated.

384 Printing (2-4) Beginning to intermediate. May be repeated.

385 Fiber (2-4) Beginning to intermediate. May be repeated.

386 Art ARROWONT BI PllTHA SCHOOL OF ARTS AND CRAFTS

387 Intro to Studio Art: Various Media (3) May be repeated. May not be repeated. Maximum 15 hours.

388 Art ARROWONT BI PllTHA SCHOOL OF ARTS AND CRAFTS

389 Intro to Studio Art: Various Media (3) May be repeated. May not be repeated. Maximum 15 hours.

390 Art ARROWONT BI PllTHA SCHOOL OF ARTS AND CRAFTS

391 Intro to Studio Art: Various Media (3) May be repeated. May not be repeated. Maximum 15 hours.

392 Intro to Studio Art: Various Media (3) May be repeated. May not be repeated. Maximum 15 hours.

393 Intro to Studio Art: Various Media (3) May be repeated. May not be repeated. Maximum 15 hours.

394 Intro to Studio Art: Various Media (3) May be repeated. May not be repeated. Maximum 15 hours.

395 Intro to Studio Art: Various Media (3) May be repeated. May not be repeated. Maximum 15 hours.

396 Intro to Studio Art: Various Media (3) May be repeated. May not be repeated. Maximum 15 hours.

397 Intro to Studio Art: Various Media (3) May be repeated. May not be repeated. Maximum 15 hours.
In 1972, Humanism in the Biologic Work (14), Introduction to the relations of biology from the perspective of the human impact on animals, plants, and microorganisms; and the human impact on the biosphere. This course examines the concept of human beings as a part of the biosphere. It includes topics such as human evolution, human societies, and the environment. The course explores the relationships between human beings and the environment, with a focus on the impact of human activity on the environment. The course also examines the role of science in understanding and addressing environmental issues. Topics include the impact of human activity on the environment, the role of science in understanding and addressing environmental issues, and the role of human beings in shaping the environment. The course is suitable for students with a background in biology, environmental science, or a related field. The course consists of lectures, discussions, and readings, and includes a research project. The course is taught by Dr. Sarah Johnson. The course is offered in the fall semester.
433 Bioprocess System Design and Analysis (3) Design of processing, handling and storage systems for biological materials and revenue. Focus on bioprocess systems. Prereq: CHEM 224, or consent of instructor. 3 hours and 1 lab. Sp.

434 Electronic Systems (3) Basic electronic systems and applications for computers. Materials, circuit design, system design, and advanced applications. Prereq: CHEM 101 or consent of instructor. 3 hours and 1 lab. F.

470 Special Problems in Bioprocess Engineering (1-3) Study of current problems and projects in bioprocess engineering. May be repeated. Maximum 8 hours. E.

BIOSYSTEMS ENGINEERING TECHNOLOGY (194)

202 Materials and Fabrication (3) Properties of materials including metals, ceramics, plastic, and steel. Prototyping and machine operation. 3 hours and 2 labs. Sp.

211 Survey of machines, engines, and systems. Differential and integral calculus; engineering and machine design. 3 hours and 3 labs. F.

342 Agricultural Machinery and Tractors (3) Functions, selection, and operation of agricultural equipment. Agricultural equipment selection and operation, repair and maintenance. Prereq: Math 125 or equivalent. 3 hours and 1 lab. F.

443 Agricultural Waste Management and Pollution Control (1) Waste management and pollution control of agricultural waste. Prereq: Math 125 or equivalent. 3 hours and 2 labs. F.

452 Small Internal Combustion Engines, (3) Theory, concepts and mechanics of small internal combustion engines. Emphasis on design, manufacturing, maintenance and operation. Prereq: Math 125 or equivalent. 3 hours and 1 lab. F.

454 Small Internal Combustion Engines, (3) Theory, concepts and mechanics of small internal combustion engines. Emphasis on design, manufacturing, maintenance and operation. Prereq: Math 125 or equivalent. 3 hours and 2 labs. F.

456 Agricultural Chemical Application Technology (3) Equipment for application of liquid, solid, and gaseous materials, including fertilizers, pesticides, and herbicides. Prereq: Math 125 or equivalent. 3 hours and 1 lab. F.

460 Fundamentals of Agriculture and Food Engineering Technology (3) Principles of agricultural and food engineering technology. Prereq: Math 125 or equivalent. 3 hours and 1 lab. F.

462 Agricultural Chemical Application Technology (3) Equipment for application of liquid, solid, and gaseous materials, including fertilizers, pesticides, and herbicides. Prereq: Math 125 or equivalent. 3 hours and 1 lab. F.

463 Agricultural Waste Management and Pollution Control (1) Waste management and pollution control of agricultural waste. Prereq: Math 125 or equivalent. 3 hours and 2 labs. F.

471 Senior Seminar (3) A capstone course in which students design and develop a major project. Prereq: Senior standing. 3 hours and 1 lab. F.

472 Plant Genetics and Society (3) Introduction to genetics, agro-biology, and society. Prereq: Consent of instructor. 3 hours and 1 lab. F.

506 Botany (193)

171 General Botany (4) I-4 - Introduction to taxonomy through the classification of organisms. Organism organization and phylogeny by systematic classification. Evolution of life and mechanisms of evolution are presented. Prereq: Biology 130-140 or equivalent. 4 hours and 3 labs. F.

176 Engineering Principles of Plants (3) Significance of plants in biologically productive systems. Principles of plant growth and development. Prereq: Biology 130-140 or equivalent. 3 hours and 1 lab. F.

205 Bio-economic Impact of Plants (3) Significance of crops and plants in the economy. Principles of plant growth and development. Prereq: Biology 130-140 or equivalent. 3 hours and 1 lab. F.

306 Genetics and Society (3) Introduction to genetics, agro-biology, and society. Prereq: Consent of instructor. 3 hours and 1 lab. F.

308 Plant Morphology (3) Morphology, development, and evolution of non-vascular plants. Prereq: Biology 130-140 or equivalent. 3 hours and 1 lab. F.

310 Plant Taxonomy (3) Emphasis on morphology, design, and classification of plants. Prereq: Biology 130-140 or equivalent. 3 hours and 1 lab. F.

312 Plant Anatomy (3) Cells, tissues, and organs; their development in vegetative and reproductive structures. Prereq: Biology 130-140 or equivalent. 3 hours and 1 lab. F.

314 Plant Physiology (3) Plant physiology, nutrition, reproduction, growth, and development. Prereq: Biology 130-140 or equivalent. 3 hours and 1 lab. F.

315 Plant Ecophysiology (3) Ecological physiology of plants. Prereq: Biology 130-140 or equivalent. 3 hours and 1 lab. F.

320 Radio-Television Advertising and Promotion (3) Study of radio-television advertising and promotion with an emphasis on writing persuasive messages—consumers (promotional, commercial, and public service). Analysis of media and research data. Promotion planning and techniques. Prereq: Broadcasting 275. F.

321 Audio/Video Production (3) Focus on the function and operation of the primary video and audio tools to develop effective communications. Lecture and laboratory projects in video and audio production, promotion, and production techniques. Prereq: Broadcasting 275. F.

322 Radio-Television Journalism (3) Lecture and laboratory courses providing students with an overview of radio, television, cable, and related technologies. Includes television studio, engineering, and production. Prereq: Broadcasting 275. F.

325 Technical Communication (3) Focus on the function and operation of the primary video and audio tools to develop effective communications. Lecture and laboratory projects in video and audio production, promotion, and production techniques. Prereq: Broadcasting 275. F.

326 Corporate Video (3) Focus on the function and operation of the primary video and audio tools to develop effective communications. Lecture and laboratory projects in video and audio production, promotion, and production techniques. Prereq: Broadcasting 275. F.

327 Cable television and Promotion (3) History and structure of the cable television industry. Examination of the role of telephone companies in the distribution of video. Examination of cable regulations and programming. Examination of the role of television and video in communications. Prereq: Broadcasting 275. F.

330 Corporate Video (3) Focus on the function and operation of the primary video and audio tools to develop effective communications. Lecture and laboratory projects in video and audio production, promotion, and production techniques. Prereq: Broadcasting 275. F.

331 Special Problems in Bioprocess Engineering (1-2) Study of current problems and projects in bioprocess engineering. May be repeated. Maximum 8 hours. E.

332 Special Problems in Bioprocess Engineering (1-2) Study of current problems and projects in bioprocess engineering. May be repeated. Maximum 8 hours. E.

333 Bio-Economic Impact of Plants (3) Significance of crops and plants in the economy. Principles of plant growth and development. Prereq: Biology 130-140 or equivalent. 3 hours and 1 lab. F.

334 Agricultural Waste Management and Pollution Control (1) Waste management and pollution control of agricultural waste. Prereq: Math 125 or equivalent. 3 hours and 2 labs. F.

335 Winter Sports (3) Introduction to winter sports: skiing, snowboarding, and related activities. Prereq: Math 125 or equivalent. 3 hours and 1 lab. F.

336 Physical Education and Health (3) Physical education and health. Prereq: Math 125 or equivalent. 3 hours and 1 lab. F.

337 Undergraduate Seminar (1) At least one hour is required for a Botany major or minor. Junior or senior standing recommended. May be repeated. Maximum 2 hours. F.

338 Fundamentals of Agriculture and Food Engineering Technology (3) Principles of agriculture and food engineering technology. Prereq: Math 125 or equivalent. 3 hours and 1 lab. F.

339 Plant Biology and Evolution (3) Emphasizing of evolutionary biology from a plant perspective. Speciation, hybridization, viability, evolution of mating systems, phenotypic plasticity, and other topics are discussed in the context of historical and evolutionary biology. Prereq: Math 125 or equivalent. 3 hours and 1 lab. F.

340 Corporate Video (3) Focus on the function and operation of the primary video and audio tools to develop effective communications. Lecture and laboratory projects in video and audio production, promotion, and production techniques. Prereq: Broadcasting 275. F.

341-442 Undergraduate Research Participation (3) Experience in research projects under the supervision of staff members. Prereq: Junior or senior standing, minimum grade average 3.0, consent of instructor. E.

342 Agricultural Machinery and Tractors (3) Functions, selection, and operation of agricultural equipment. Agricultural equipment selection and operation, repair and maintenance. Prereq: Math 125 or equivalent. 3 hours and 1 lab. F.

343 Agricultural Waste Management and Pollution Control (1) Waste management and pollution control of agricultural waste. Prereq: Math 125 or equivalent. 3 hours and 2 labs. F.

344 Agricultural Waste Management and Pollution Control (1) Waste management and pollution control of agricultural waste. Prereq: Math 125 or equivalent. 3 hours and 2 labs. F.

345 Agricultural Waste Management and Pollution Control (1) Waste management and pollution control of agricultural waste. Prereq: Math 125 or equivalent. 3 hours and 2 labs. F.

346 Agricultural Waste Management and Pollution Control (1) Waste management and pollution control of agricultural waste. Prereq: Math 125 or equivalent. 3 hours and 2 labs. F.

347 Agricultural Waste Management and Pollution Control (1) Waste management and pollution control of agricultural waste. Prereq: Math 125 or equivalent. 3 hours and 2 labs. F.

348 Agricultural Waste Management and Pollution Control (1) Waste management and pollution control of agricultural waste. Prereq: Math 125 or equivalent. 3 hours and 2 labs. F.

349 Agricultural Waste Management and Pollution Control (1) Waste management and pollution control of agricultural waste. Prereq: Math 125 or equivalent. 3 hours and 2 labs. F.

350 Agricultural Waste Management and Pollution Control (1) Waste management and pollution control of agricultural waste. Prereq: Math 125 or equivalent. 3 hours and 2 labs. F.

351 Agricultural Waste Management and Pollution Control (1) Waste management and pollution control of agricultural waste. Prereq: Math 125 or equivalent. 3 hours and 2 labs. F.
400 Radio and Television Management (3) Business policies and practices of operational, editorial, diplomatic, financial, market research, and technical styles and techniques with an emphasis on radio, television, and cable management. May not be taken for credit by students who have earned CEM 135. Pre: Senior standing.

410 Project (2) Work and learning experiences at radio, television, or cable network affiliate. Final work and learning experiences required. May be repeated twice. Pre: Senior standing and consent of department head. S/NC grading only.

484 Special Topics (2) Selected issues in electronic media. Topics vary. Pre: Consent of instructor. May be repeated. Maximum of 4 hours.

BUSINESS ADMINISTRATION (205)


245 Special Topics (1-6) Topics of current interest in business. Topics announced prior to offering. May be repeated for additional credit. Prerequisite: approval of instructor. Maximum 6 hours. Pre: Consent of instructor.

311 International Marketing (3) Survey of accounting implications of conducting business operations in an international context. Analysis of relevant cross-national environments, including cultural, political, economic and legal characteristics. Pre: ECON 201.

312 Honors: Corporate Executive-in-Residence Seminar (1) Mini-course with corporate executive from a wide spectrum of business disciplines. Dissemination and application of relevant business knowledge through firsthand experience with U.S. Corporations. Effective presentations and small group discussions are required in conjunction with faculty and industry settings. Pre: Senior standing. Pl: Consent of instructor. Maximum of 1 hour. Pre: Consent of instructor.

401 Foreign Study (1-15) Pre: Consent of instructor.

405 Off-Campus Study (1-15) Satisfactory/No Credit grading only. Pre: Consent of instructor.

410 Research in Chemistry (3) Open to those interested in research and offers an opportunity to work with a chemical scientist or engineer. Students work with researchers on current research projects. Requirements include problem solving, interpreting results, and formulating hypotheses. Credit may not be applied toward a major or minor in chemistry. May not be applied toward a major or minor in chemistry. May be repeated. Maximum 4 hours. Pre: Consent of instructor. S/NC grading only.

418 Analytical Chemistry Laboratory (1) Experiments on topics covered in 417. Coreq: 417. E

425 Analytical Chemistry Laboratory (3) Experiments on topics covered in 424. Coreq: 424. E

427 Advanced Analytical Chemistry (3) Modern electroanalytical methods; mass spectrometry; optical spectroscopy; magnetic resonance methods; advanced chromatographic theory. Pre: 372. Pl: Consent of instructor. E

429 Advanced Analytical Chemistry Laboratory (3) Experiments on topics covered in 428. Coreq: 428. E

430 Advanced Organic Chemistry Laboratory (3) Experiments on topics covered in 430. Coreq: 430. E

435-445 Advanced Physical Chemistry (3,3) Topics from chemical dynamics, statistical thermodynamics, quantum mechanics of atomic and molecular systems, crystal structure and solid state. Prereq: 434 or 435. St: Consent of instructor.
COLLEGE SCHOLARS 

COLLEGE HONORS 

100 Computer Organization (4) Number systems, Boolean logic, combinational and sequential circuits, computer systems, operating systems, memory and caching, shared memory computer organization and hardware, computer architecture, assembly language programming. Preceptor. 100. 3 hour lab required.

203 Cross-Cultural Perspectives in World Literature (3) Literary perspectives and cultural issues in the historical context of a literature. Writing-emphasis course. Prereq: 201. 3 hour lab required.

102 Introduction to Computer Science (4) Problem solving and algorithm development. Organization and characteristics of modern digital computer. Concepts underlying computer hardware and software. Programming with an emphasis on procedures and data, and employing high-level languages. Students without prior computer experience may receive credit for 102 or 105 but not both without consent of instructor. 102. 3 hour lab required.

204 Data Structures (Advanced) Advanced problem solving and algorithm development. Organization and characteristics of modern digital computer. Concepts underlying computer hardware and software. Programming with an emphasis on procedures and data, and employing high-level languages. Students without prior computer experience may receive credit for 102 or 105 but not both without consent of instructor. 204. 3 hour lab required.

203 Cross-Cultural Perspectives in World Literature (3) Literary perspectives and cultural issues in the historical context of a literature. Writing-emphasis course. Prereq: 201. 3 hour lab required.

102 Introduction to Computer Science (4) Problem solving and algorithm development. Organization and characteristics of modern digital computer. Concepts underlying computer hardware and software. Programming with an emphasis on procedures and data, and employing high-level languages. Students without prior computer experience may receive credit for 102 or 105 but not both without consent of instructor. 102. 3 hour lab required.

204 Data Structures (Advanced) Advanced problem solving and algorithm development. Organization and characteristics of modern digital computer. Concepts underlying computer hardware and software. Programming with an emphasis on procedures and data, and employing high-level languages. Students without prior computer experience may receive credit for 102 or 105 but not both without consent of instructor. 204. 3 hour lab required.

203 Cross-Cultural Perspectives in World Literature (3) Literary perspectives and cultural issues in the historical context of a literature. Writing-emphasis course. Prereq: 201. 3 hour lab required.

102 Introduction to Computer Science (4) Problem solving and algorithm development. Organization and characteristics of modern digital computer. Concepts underlying computer hardware and software. Programming with an emphasis on procedures and data, and employing high-level languages. Students without prior computer experience may receive credit for 102 or 105 but not both without consent of instructor. 102. 3 hour lab required.

204 Data Structures (Advanced) Advanced problem solving and algorithm development. Organization and characteristics of modern digital computer. Concepts underlying computer hardware and software. Programming with an emphasis on procedures and data, and employing high-level languages. Students without prior computer experience may receive credit for 102 or 105 but not both without consent of instructor. 204. 3 hour lab required.

203 Cross-Cultural Perspectives in World Literature (3) Literary perspectives and cultural issues in the historical context of a literature. Writing-emphasis course. Prereq: 201. 3 hour lab required.

102 Introduction to Computer Science (4) Problem solving and algorithm development. Organization and characteristics of modern digital computer. Concepts underlying computer hardware and software. Programming with an emphasis on procedures and data, and employing high-level languages. Students without prior computer experience may receive credit for 102 or 105 but not both without consent of instructor. 102. 3 hour lab required.

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204 Data Structures (Advanced) Advanced problem solving and algorithm development. Organization and characteristics of modern digital computer. Concepts underlying computer hardware and software. Programming with an emphasis on procedures and data, and employing high-level languages. Students without prior computer experience may receive credit for 102 or 105 but not both without consent of instructor. 204. 3 hour lab required.

203 Cross-Cultural Perspectives in World Literature (3) Literary perspectives and cultural issues in the historical context of a literature. Writing-emphasis course. Prereq: 201. 3 hour lab required.
493 Independent Study (1-15) Independent study under the direction of a faculty member. Consent of instructor required. May be repeated for up to 15 hours. A maximum of 3 hours may be applied toward the major.

492 Economics Off-Campus Study (1-6) Study abroad. Satisfactory-No Credit grading only.

201 Introductory Economics: A Survey course (4) Theory of consumer behavior, theory of supply and demand, costs of production, market models, national accounting, income determination, monetary and fiscal policy, and unemployment. Writing emphasis course.

200 Principles of Economics (3) Theory of consumer behavior, theory of supply and demand, costs of production, market models, national accounting, income determination, monetary and fiscal policy, and unemployment. Writing emphasis course.

436 Economics of Health and Health Care (3) Medical care and health status, demand for medical care and insurance provisions and the health insurance market, provision of health care services, and the economics of health care markets. Writing emphasis course.

426 Economics of Resources and Environmental Policy (3) Economic analysis of environmental policy problems. Methods and costs of development of natural resources and impact of growth on environment. Writing emphasis course.

421 Political Economy of World Development (3) Topics vary. May be repeated when topic varies. Maximum 9 hours.

415 Western Economics Thought Since the 18th Century (3) Method of study of doctrinal history. Origins and development of modern economic thought, economic analysis of problems in the English language today. Writing emphasis course.

413 Intermediate Microeconomics (3) Theories of consumer behavior, of production and costs, of price and behavior of firms in perfect competition, monopoly, and imperfect competition; consumers' surplus, producer surplus, and welfare. Writing emphasis course.

412 Intermediate Macroeconomics (3) Analysis of aggregate economic behavior, measurement, theory of income determination, fiscal and monetary policy and growth. Writing emphasis course.

411 Political Economy of World Development (3) Topics vary. May be repeated when topic varies. Maximum 9 hours.

409 Perspectives in Ecology and Evolutionary Biology (3) Topics vary. May be repeated when topic varies. Maximum 9 hours.

406 Evolution (3) Principles, facts, and theories regarding life processes, with a major emphasis on the development of the diversity of organic life. The historical development of ideas of the evolution of life. Writing emphasis course.

405 Evolutionary Principles in Organismal Biology (3) Evolution, adaptation, distribution, classification, distribution, and classification of selected animals and plants. Writing emphasis course.

404 Field Study in Education (1-3) Problem of persons in active service in the field, includes methods of teaching, curriculum materials, school-community relations, and school organizations. May be repeated. Maximum 6 hours.

403 Plant Evolution (3) (Same as Botany 403.)

402 Professional Studies: The Educator (3) Observation, methods and techniques of teaching, curriculum materials, school-community relations, and school organizations. May be repeated. Maximum 6 hours.

401 Professional Studies: The Learner (3) Understanding of students from diverse cultures. Study of learning processes, including study habits, strategies, and techniques of teaching, curriculum materials, school-community relations, and school organizations. May be repeated. Maximum 6 hours.

398 Field Study in Education (1-3) Problem of persons in active service in the field, includes methods of teaching, curriculum materials, school-community relations, and school organizations. May be repeated. Maximum 6 hours.

397 Independent Study (1-15) Independent study under the direction of a faculty member. Consent of instructor required. May be repeated for a maximum of 15 hours. A maximum of 3 hours may be applied toward the major. F, Sp, Su.

396 Independent Study in Education (1-15) Independent study under the direction of a faculty member. Consent of instructor required. May be repeated for a maximum of 15 hours. A maximum of 3 hours may be applied toward the major. F, Sp, Su.

395 Independent Study (1-15) Independent study under the direction of a faculty member. Consent of instructor required. May be repeated for a maximum of 15 hours. A maximum of 3 hours may be applied toward the major. F, Sp, Su.

394 Independent Study (1-15) Independent study under the direction of a faculty member. Consent of instructor required. May be repeated for a maximum of 15 hours. A maximum of 3 hours may be applied toward the major. F, Sp, Su.

393 Independent Study (1-15) Independent study under the direction of a faculty member. Consent of instructor required. May be repeated for a maximum of 15 hours. A maximum of 3 hours may be applied toward the major. F, Sp, Su.

392 Independent Study (1-15) Independent study under the direction of a faculty member. Consent of instructor required. May be repeated for a maximum of 15 hours. A maximum of 3 hours may be applied toward the major. F, Sp, Su.

391 Independent Study (1-15) Independent study under the direction of a faculty member. Consent of instructor required. May be repeated for a maximum of 15 hours. A maximum of 3 hours may be applied toward the major. F, Sp, Su.

389 Professional Studies: Teaching Strategies (3) Methods and techniques of teaching, curriculum materials, school-community relations, and school organizations. May be repeated. Maximum 6 hours.

388 Professional Studies: Teachers as Professional Practitioners (3) Methods and techniques of teaching, curriculum materials, school-community relations, and school organizations. May be repeated. Maximum 6 hours.

387 Professional Studies: Educational Leadership (3) Observation, methods and techniques of teaching, curriculum materials, school-community relations, and school organizations. May be repeated. Maximum 6 hours.

386 Professional Studies: The Teacher as Professional Practitioner (3) Methods and techniques of teaching, curriculum materials, school-community relations, and school organizations. May be repeated. Maximum 6 hours.

385 Professional Studies: The Teacher as Professional Practitioner (3) Methods and techniques of teaching, curriculum materials, school-community relations, and school organizations. May be repeated. Maximum 6 hours.

384 Professional Studies: The Learner (3) Understanding of students from diverse cultures. Study of learning processes, including study habits, strategies, and techniques of teaching, curriculum materials, school-community relations, and school organizations. May be repeated. Maximum 6 hours.

383 Professional Studies: The Teacher as Professional Practitioner (3) Methods and techniques of teaching, curriculum materials, school-community relations, and school organizations. May be repeated. Maximum 6 hours.

382 Professional Studies: The Teacher as Professional Practitioner (3) Methods and techniques of teaching, curriculum materials, school-community relations, and school organizations. May be repeated. Maximum 6 hours.

381 Professional Studies: The Learner (3) Understanding of students from diverse cultures. Study of learning processes, including study habits, strategies, and techniques of teaching, curriculum materials, school-community relations, and school organizations. May be repeated. Maximum 6 hours.

380 Professional Studies: The Teacher as Professional Practitioner (3) Methods and techniques of teaching, curriculum materials, school-community relations, and school organizations. May be repeated. Maximum 6 hours.

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355 Professional Studies: The Teacher as Professional Practitioner (3) Methods and techniques of teaching, curriculum materials, school-community relations, and school organizations. May be repeated. Maximum 6 hours.
267 Microsensors: Transport Phenomena (1) Overview of momentum, heat and mass transfer processes, the weasels, differential and integral equations, iodine evaporation involving molecular diffusion, including simulta-neous viscous and thermal-mechanical stress, 3.50 and consent of instructor.

268 Chemical Reactor Fundamentals (3) Homogeneous and heterogeneous reactions kinetics; heat-transfer and chemical reactor modeling; solid lines for closed and flow systems; non-ideal gas behavior; mass transfer enthalpy, and catalytic reac-tors. Prereq: 240, 280, 301.

272 Thermoenergetics (1) Processes in Control Proces-ses (1) Selected reactions work in small groups on main-topics in process dynamics and control. Prereq: 272 and senior standing from their department.

273 Honors-Juried Process Simulation Laboratory (1) Interfacing fluid batch continues processes to a control system. Topics: automated analysis, batch reactor, and object oriented concepts are used to design automation inter-face. Prereq: 272 and consent of instructor. 

274 Honors Applied Process Automation Design Projects (3) Industrial programmable logic controllers (PLC), and industrial automation and control. Modeling software is used on worksta-tions to develop automation solutions for small teams. Advanced control strategies, networking on inter-net based systems. Prereq: 272 and consent on instructor.


405 Hydrology (4) Hydrological processes and properties of selected soils and water resources systems. Basic hydrology, hydrologic cycle, water resources, and non-destructive and destructive methods. Prereq: 300. Coreq: 305 or 405.

413 Advanced Control Systems (3) Chemical and electri-cal properties of soils and water resources systems. Basic hydrology, hydrologic cycle, water resources, and non-destructive and destructive methods. Prereq: 300. Coreq: 305 or 405.

414 Honors Thesis (3) An independent research project on a topic of interest to the student. Prereq: Senior standing. "8 hours, 1 lab. Prereq: Junior standing in 360.


432 Traffic Engineering (3) Characteristics of drivers, vehicles, and roadway and their interaction; traffic circula-tion, traffic analysis, geometric design and design of aggressive and pedestrian facilities. Prereq: 360. Coreq: 305 or 405.

440 Civil Engineering Systems Design and Manage-ment (3) Method of data analysis and modeling of civil engineering systems to enhance resource disposition for specific application to problems of transportation, environ-mental, water resources, structural analysis, material science, etc. Prereq: Senior standing and 301.


443 Gated devices: Transport Phenomena (1) Overview of momentum, heat and mass transfer processes, the weasels, differential and integral equations, iodine evaporation involving molecular diffusion, including simulta-neous viscous and thermal-mechanical stress, 3.50 and consent of instructor.
340 Analog Communication Amplitude and Frequency Modulation (3) Filter design, noise, signal-to-noise ratio, modulation, and demodulation. Includes Level I design projects which require laboratory work.


361 Power Electronics (3) Principles and characteristics of power semiconductor devices, single-phase and three-phase inverters, DC-DC and DC-AC converters. Includes laboratory experiments. Prereq: Senior standing. Non-majors require consent of instructor. (Same as Nuclear Engineering 464)


445 Electromagnetic Compatibility (3) Principles and practices to avoid interference among and with internal and external devices. Parameters and coupling for dipole, loop, ended, and quarter-wavelength transmission lines and conductors. Transmission lines and ground structure interactions and characteristics. Includes Level I design projects which require laboratory work. Prereq: 312 and Math 251.

511 Microprocessors and Microcontrollers in Electrical Engineering (3) Programming of microprocessors and microcontrollers, and microcomputer interfacing for data acquisition systems. Includes Level I design projects which require laboratory work. Prereq: Math 251 and CS 102.

541 Fourier Transform Techniques (3) Fourier transforms of signals and systems with applications to communications, image processing, and biomedical signals. Includes Level I design projects which require laboratory work. Prereq: Math 251 and CS 102.
ENGINEERING FUNDAMENTALS (323)

201 Engineering Skills Development (4) Introduction to basic mechanical and physical constraints in the design and use of structures and systems; introduction to computer-aided design and drafting. Prerequisites: Consent of instructor. Coreq: Math 130 or placement in Math 141 or higher.

202 Fundamentals of Engineering Mechanics (6) Fundamentals of statics and dynamics with emphasis on the application of mathematical modeling software tools, team projects and problem solving, presentation of professional design and engineering processes. Introduction to the design process and the use of computers, design and team projects. Topics to be covered include statics, dynamics and machines, structural analysis, simple harmonic motion, Newtonian mechanics, statics, and dynamics. Prerequisites: Consent of instructor. Coreq: Math 130 or placement in Math 141 or higher.

203 Introduction to Electrical Engineering (1) Concepts of electric circuits and systems. Introduction to the use of software packages. 2 hours lecture, 1 lab. Prereq: Consent of instructor.

204 Fundamentals of Engineering Mechanics (6) Fundamentals of statics and dynamics with emphasis on the application of mathematical modeling software tools, team projects and problem solving, presentation of professional design and engineering processes. Introduction to the design process and the use of computers, design and team projects. Topics to be covered include statics, dynamics and machines, structural analysis, simple harmonic motion, Newtonian mechanics, statics, and dynamics. Prerequisites: Consent of instructor. Coreq: Math 130 or placement in Math 141 or higher.

205 Introduction to Mechanical Engineering (1) Concepts of mechanical and thermal systems. Introduction to the use of software packages. 2 hours lecture, 1 lab. Prereq: Consent of instructor.

206 Principles of Circuit Analysis (3) Application of linear circuits to the design of mechanical systems. Use of software packages. 2 hours lecture, 1 lab. Prereq: Consent of instructor.

207 Fundamentals of Engineering Mechanics (6) Fundamentals of statics and dynamics with emphasis on the application of mathematical modeling software tools, team projects and problem solving, presentation of professional design and engineering processes. Introduction to the design process and the use of computers, design and team projects. Topics to be covered include statics, dynamics and machines, structural analysis, simple harmonic motion, Newtonian mechanics, statics, and dynamics. Prerequisites: Consent of instructor. Coreq: Math 130 or placement in Math 141 or higher.

208 Review of Engineering Fundamentals (1) A review of engineering fundamentals for students returning to engineering. Satisfactory/No Credit.

209 Engineering Design Workshop (1) Introduction to the design process. Project experiences involving working in teams, oral presentations, and written reports. Prerequisites: Consent of instructor.

ENGINEERING INDUSTRIAL (556)

201 Business and Management of Materials (3) Concepts of materials management and materials selection in design, and the role of materials in society. Prerequisites: Consent of instructor.

202 Fundamentals of Manufacturing (3) Introduction to manufacturing systems. Prerequisites: Consent of instructor.

203 Production System Planning and Control (3) Theory and application of production systems including introduction to the use of materials handling systems, alternative production planning, and scheduling. Prerequisites: Consent of instructor.

204 Production System Planning and Control (3) Theory and application of production systems including introduction to the use of materials handling systems, alternative production planning, and scheduling. Prerequisites: Consent of instructor.

205 Principles of Ceramic Materials (3) Properties of ceramic materials, processing, properties, and applications of ceramic materials. Prerequisites: 201. F

206 Principles of Polymeric Materials (3) Synthesis and properties of polymeric materials, including processing and applications. Prerequisites: 201. F

207 Principles of Metallic Materials (3) Properties of metallic materials, including processing and applications. Prerequisites: 201. F

208 Principles of Materials Science and Engineering (3) An introduction to the materials science course offerings. Prerequisites: Consent of instructor.

209-210 Materials Seminar (0,1) Professional, ethical considerations, safety, patents, product liability, industrial patents, industrial property, and related techniques. Prerequisites: Consent of instructor.

210 Introduction to Materials Science and Engineering (1) Concepts of materials science and engineering. Prerequisites: Consent of instructor.

211 Engineering Data Analysis and Process Improvement (3) Application of statistical and experimental design methods to improve manufacturing processes. Prerequisites: Consent of instructor.

212 Introduction to Manufacturing Systems (3) Introduction to manufacturing systems, including computer-aided design and manufacturing. Prerequisites: Consent of instructor.

213 Principles of Manufacturing Processes (3) Characteristics of various manufacturing processes, including casting, forging, and welding. Prerequisites: Consent of instructor.

214 Principles of Manufacturing Systems (3) Introduction to manufacturing systems, including computer-aided design and manufacturing. Prerequisites: Consent of instructor.

215 Principles of Industrial Engineering (3) An introduction to the field of industrial engineering. Prerequisites: Consent of instructor.

216 Industrial Safety (3) Accident causation, loss control, and investigation. Prerequisites: Consent of instructor.

217 Introduction to Materials Science and Engineering (3) An introduction to the materials science course offerings. Prerequisites: Consent of instructor.

218-219 Materials Seminar (0,1) Professional, ethical considerations, safety, patents, product liability, industrial patents, industrial property, and related techniques. Prerequisites: Consent of instructor.

220 Introduction to Materials Science and Engineering (1) Concepts of materials science and engineering. Prerequisites: Consent of instructor.

221 Engineering Data Analysis and Process Improvement (3) Application of statistical and experimental design methods to improve manufacturing processes. Prerequisites: Consent of instructor.

222 Introduction to Manufacturing Systems (3) Introduction to manufacturing systems, including computer-aided design and manufacturing. Prerequisites: Consent of instructor.

223 Principles of Manufacturing Processes (3) Characteristics of various manufacturing processes, including casting, forging, and welding. Prerequisites: Consent of instructor.

224 Principles of Manufacturing Systems (3) Introduction to manufacturing systems, including computer-aided design and manufacturing. Prerequisites: Consent of instructor.

225 Principles of Industrial Engineering (3) An introduction to the field of industrial engineering. Prerequisites: Consent of instructor.

226 Industrial Safety (3) Accident causation, loss control, and investigation. Prerequisites: Consent of instructor.

227 Introduction to Materials Science and Engineering (3) An introduction to the materials science course offerings. Prerequisites: Consent of instructor.

228-229 Materials Seminar (0,1) Professional, ethical considerations, safety, patents, product liability, industrial patents, industrial property, and related techniques. Prerequisites: Consent of instructor.

230 Introduction to Materials Science and Engineering (1) Concepts of materials science and engineering. Prerequisites: Consent of instructor.

231 Engineering Data Analysis and Process Improvement (3) Application of statistical and experimental design methods to improve manufacturing processes. Prerequisites: Consent of instructor.

232 Introduction to Manufacturing Systems (3) Introduction to manufacturing systems, including computer-aided design and manufacturing. Prerequisites: Consent of instructor.

233 Principles of Manufacturing Processes (3) Characteristics of various manufacturing processes, including casting, forging, and welding. Prerequisites: Consent of instructor.

234 Principles of Manufacturing Systems (3) Introduction to manufacturing systems, including computer-aided design and manufacturing. Prerequisites: Consent of instructor.

235 Principles of Industrial Engineering (3) An introduction to the field of industrial engineering. Prerequisites: Consent of instructor.

236 Industrial Safety (3) Accident causation, loss control, and investigation. Prerequisites: Consent of instructor.

237 Introduction to Materials Science and Engineering (3) An introduction to the materials science course offerings. Prerequisites: Consent of instructor.

238-239 Materials Seminar (0,1) Professional, ethical considerations, safety, patents, product liability, industrial patents, industrial property, and related techniques. Prerequisites: Consent of instructor.

240 Process Improvement Through Planned Experimentation (3) Review of fundamental processes of continuous improvement, introduction to experimental design techniques, and introduction to the design of experiments. Prerequisites: Consent of instructor.

241 Special Topics (3) Topics related to basic design and current practice. May not be repeated to satisfy senior requirements for graduation. Maximum three credits during junior or senior years. Prerequisites: Consent of instructor.

242 Senior Seminar (3) Current topics in electrical engineering. May not be repeated. Prerequisite: Consent of instructor. Coreq: Consent of instructor.

243-244 Special Topics in Industrial Engineering (3-3, 1-1) Recent developments in industrial engineering including new areas of application, new research in techniques and new methodologies. May be repeated once. Prerequisite: Senior standing and consent of instructor.

ENGINEERING MATERIALS SCIENCE (638)

211 Introduction to Materials Science and Engineering (1) An introduction to materials science and engineering. Prerequisites: Consent of instructor.

212 Introduction to Materials Science and Engineering (1) An introduction to materials science and engineering. Prerequisites: Consent of instructor.

213 Principles of Polymeric Materials (3) Synthesis and properties of polymeric materials, including processing and applications. Prerequisites: 201. F

214 Principles of Metallic Materials (3) Properties of metallic materials, including processing and applications. Prerequisites: 201. F

215 Principles of Ceramic Materials (3) Properties of ceramic materials, including processing and applications. Prerequisites: 201. F

216 Principles of Materials Science and Engineering (3) An introduction to the materials science course offerings. Prerequisites: Consent of instructor.

217 Diffusion and Phase Transformations (3) Thermodynamics of matter; diffusion; kinetics; phase transformations. Prerequisites: Consent of instructor.

218 Principles of Mechanical Properties (3) Synthesis and molecular structure of polymeric; polymerization kinetics; molecular characterization; crystalline and glassy polymers; characterization; crystallinity. Prerequisites: 201. F

219 Introduction to Materials Science and Engineering (1) Concepts of materials science and engineering. Prerequisites: Consent of instructor.

220 Introduction to Materials Science and Engineering (1) Concepts of materials science and engineering. Prerequisites: Consent of instructor.

221 Engineering Data Analysis and Process Improvement (3) Application of statistical and experimental design methods to improve manufacturing processes. Prerequisites: Consent of instructor.

222 Introduction to Manufacturing Systems (3) Introduction to manufacturing systems, including computer-aided design and manufacturing. Prerequisites: Consent of instructor.

223 Principles of Manufacturing Processes (3) Characteristics of various manufacturing processes, including casting, forging, and welding. Prerequisites: Consent of instructor.

224 Principles of Manufacturing Systems (3) Introduction to manufacturing systems, including computer-aided design and manufacturing. Prerequisites: Consent of instructor.

225 Principles of Industrial Engineering (3) An introduction to the field of industrial engineering. Prerequisites: Consent of instructor.

226 Industrial Safety (3) Accident causation, loss control, and investigation. Prerequisites: Consent of instructor.

227 Introduction to Materials Science and Engineering (3) An introduction to the materials science course offerings. Prerequisites: Consent of instructor.

228-229 Materials Seminar (0,1) Professional, ethical considerations, safety, patents, product liability, industrial patents, industrial property, and related techniques. Prerequisites: Consent of instructor.

230 Introduction to Materials Science and Engineering (1) Concepts of materials science and engineering. Prerequisites: Consent of instructor.

231 Engineering Data Analysis and Process Improvement (3) Application of statistical and experimental design methods to improve manufacturing processes. Prerequisites: Consent of instructor.

232 Introduction to Manufacturing Systems (3) Introduction to manufacturing systems, including computer-aided design and manufacturing. Prerequisites: Consent of instructor.

233 Principles of Manufacturing Processes (3) Characteristics of various manufacturing processes, including casting, forging, and welding. Prerequisites: Consent of instructor.

234 Principles of Manufacturing Systems (3) Introduction to manufacturing systems, including computer-aided design and manufacturing. Prerequisites: Consent of instructor.

235 Principles of Industrial Engineering (3) An introduction to the field of industrial engineering. Prerequisites: Consent of instructor.

236 Industrial Safety (3) Accident causation, loss control, and investigation. Prerequisites: Consent of instructor.

237 Introduction to Materials Science and Engineering (3) An introduction to the materials science course offerings. Prerequisites: Consent of instructor.

238-239 Materials Seminar (0,1) Professional, ethical considerations, safety, patents, product liability, industrial patents, industrial property, and related techniques. Prerequisites: Consent of instructor.

240 Process Improvement Through Planned Experimentation (3) Review of fundamental processes of continuous improvement, introduction to experimental design techniques, and introduction to the design of experiments. Prerequisites: Consent of instructor.
301 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, Rankine cycle. Prereq: Mathematics 142.
302 Thermodynamics II (3) Properties of gases and liquids, chemical reactions and mixtures, applications of flow analysis to engineering problems. Prereq: 301.
304 Fluid Mechanics (3) Flow properties of incompressible and compressible fluids, application to hydraulic design problems. Prereq: 302, 305.
305 Energy Transport (3) Thermal radiation, heat and forced convection. Prereq: 301, 304.
310 Introduction to Thermal Engineering (3) Development of first law analysis of thermal systems with emphasis on turbomachinery, heat exchangers, combustion and system optimization. Prereq: 304, 305, 306.
311 Thermodynamics Engineering (3) Mechanical processes, thermodynamics, chemical equilibrium, heat transfer, radiation, cycles, refrigeration. Prereq: 302, 304, 305.
352 Advanced Chemical Engineering (3) Advanced topics in chemical engineering with special emphasis on the application of chemical engineering principles to the solution of problems in the design and operation of chemical processes. Prereq: 304, 305, 306.
396 Advanced Chemical Engineering (3) Topics to be announced. Prereq: 304, 305, 306.
397 Advanced Mechanical Engineering (3) Topics to be announced. Prereq: 304, 305, 306.
400 Senior Seminar (1) Current topics related to nuclear and radiological engineering. Prereq: Senior standing. Satisfactory/No Credit.
402 Introduction to Nuclear and Radiological Engineering (1) Introduction to nuclear and radiological engineering and radiological protection. Prereq: Consent of instructor. Satisfactory/No Credit.
406 Radiation Shielding (3) Radiation shielding for nuclear facilities, environmental and biological effects, applications of nuclear engineering principles in shielding design. Prereq: 304, 305, 306.
421 Introduction to Nuclear Criticality Safety (3) Fundamentals of nuclear critical safety; critical accident criteria; safety standards; overview of reactor computer codes; applications; prerequisites: Physics 231, Mathematics 172.

422 Fundamentals of Reactor Theory (3) Functions of reactor physics: behavior of neutrons, spectrum of fast neutrons, and neutron spectra; reactor design; reactor criticality; reactor safety; prerequisites: Physics 231, Mathematics 172.

423 Radiation Risk Analysis (3) Radiation risk elements and methodological issues, dose assessment; new data, prediction of radiation risks, radiological safety standards.

424 Introduction to Fusion Energy I (3) Same as Electrical Engineering 485.

425 Introduction to Fusion Energy II (3) Same as Electrical Engineering 486.

426 Nuclear Reactor Theory II (3) Functions of reactor physics: behavior of neutrons, spectrum of fast neutrons, and neutron spectra. Analytical and numerical methods applied in nuclear reactor analysis; principles, safety considerations, power distribution calculations and safety assessment criteria. Prerequisites: 422.

427 Nuclear System Design (3) First order design and analysis of nuclear reactors; interface with non-nuclear aspects of system design including system reliability and economics, data privacy. Prerequisite: 427.

428 Introduction to Maintenance and Reliability Engineering (3) Principles of maintenance and reliability engineering, and management. Topics include: information introduction to historical data, maintenance, machinery diagnosis, non-destructive testing, life production, failure models, variation of reliability, economic analysis, increasing a preventive maintenance program, and cost-minimized maintenance management. Prerequisites: Consent of instructor. (Same as Materials Science and Engineering 484 and Mechanical Engineering 486.)

429 Safety Engineering (3) Safety issues related to recent developments and joint projects. Prerequisite: Senior standing. Consent of instructor may be required.

430 Special Topics in Radiological Engineering (3) Focused related to recent developments and joint projects. Prerequisite: Senior standing on consent of instructor. (Same as Materials Science and Engineering 435.)

431 Radiation Protection (3) External and internal dosimetry, biological effects of radiation, radiation detection, radiation risk assessment. Prerequisites: Physics 301.

4322 Biomechanics (3) Mechanical properties of living tissue, behavior of healthy tissue, mechanical properties of pathologic tissue. Bioengineering principles and applications to clinical engineering. Prerequisite: 321.


438 Dynamic Data Acquisition (3) Use of instrumentation for the collection of engineering data and the application of laboratory equipment to the study of transformed data. Prerequisites: EE 301, ME 363.

442 Fluid Mechanics II (3) Integral forms of linear and angular momentum; elements of potential flow; inviscid and viscous flows; compressible flows; potential flow; methods of flow measurement; laboratory. Prerequisites: 341, Mathematics 231.

444 Fundamentals of Principle of Composite Materials (3) Stress-strain relations; applications including axially loaded members, torsion of circular shafts, bending of beams and column stability. Prerequisites: EE 301, Mathematics 231.

446 Dynamic of Artifical Internal Organs (3) Concepts of artificial internal organs, biomaterials compatibility, prosthesis design, bioengineering principles, systemic effects. Prerequisite: 321.


454 Computational Mechanics (3) Integration of fundamental physical laws, mathematical methods, and computational techniques necessary to develop empty design and analysis capabilities. Finite element method. Prerequisites: 301 EE. Corequisites: 341.
475 Teaching English as a Second or Foreign Language (3) Covers issues, principles, and techniques in teaching grammar, speaking, pronunciation, reading, writing, and listening. Emphasizes observation and teaching practices in ESL classrooms and development of ESL materials and tests. Prereq: 474. (Same as Linguistics 474.)

471 Sociolinguistics (3) Language in relation to sex, age, race, and social class. Focuses on language development, social attitudes, and social consequences of language use. Prereq: 471 or 472 or Linguistics 200 or consent of instructor. (Same as Linguistics 471.)

462 Writing for Publication (3) Principles and practices of writing for publication. Dissertations, theses, articles, and reports in science and technology. Prereq: 460. Consent of instructor.

461 Special Topics in Rhetoric (3) Topics vary. May be repeated with different topics. Maximum 6 hours. Consent of instructor.

460 Persuasive Writing (3) Focuses on writing and analyzing persuasive texts in public, private, and academic contexts. Prereq: 360 or consent of instructor.

456 Contemporary/Postmodern Literature (3) Studies the development of contemporary/postmodern literature. Emphasis on different literary modes and their implications for society. Prereq: 440 or consent of instructor.

455 Technical Editing (3) Editing technical material for publication. Preparation of style, format, graphics, and indexing. Production management. Prereq: 350 or consent of instructor.

454 Writing for Publication (3) Principles and practices of writing for publication. Dissertations, theses, articles, and reports in science and technology. Prereq: 460. Consent of instructor.

453 Advanced Poetry Writing (3) Development of skills acquired in Writing Poetry courses. Prereq: 363 or consent of instructor.

452 Advanced Prose Writing (3) Development of skills acquired in basic writing fiction courses. Prereq: 350 or consent of instructor.

451 Writing,astylist, and Production of Technical Documents (3) Prerequisites: 451 or 452. Emphasis on the principles of effective technical writing. Production of various documents that introduce you to a professional audience. Prereq: 363 or consent of instructor.

450 Special Topics in Language (3) May be repeated. Maximum 6 hours with consent. (Same as Linguistics 450.)

448 Special Topics in Criticism (3) Content varies. Special topics in theoretical and methodological approaches to polish and American literature. May be repeated with different topics. Maximum 6 hours. Consent of instructor.

447 Special Topics in Film (1-3) Topics vary. May be repeated with different topics.Maximum 6 hours. (Same as Cinema Studies 447.)

446 Language and Law (3) Language in the Anglo-American legal process. Focus on (a) International law: written and spoken language; legal and social impacts of bilingualism; general legal theory and the role of language in law; and (b) American law: legal language and practice. Prereq: 363 or consent of instructor. (Same as Linguistics 446.)

445 Foreign Study (1-15) Seeing, studying, and writing about drama as performed in London and Stratford-Upon-Avon during the summer. (Same as English 445.)

444 Special Topics in Criticism (3) Content varies. Special topics in theoretical and methodological approaches to British and American literature. May be repeated with consent of department. Maximum 6 hours. Consent of instructor. (Same as English 444.)

443 Feminist Writing (3) Focuses on feminist literary theory. Prereq: 442. Consent of instructor.

442 Women's Studies (3) Emphasis on feminist literary theory. Prereq: 442. Consent of instructor.

441 Composition and Rhetoric (3) Introduction to the historical, theoretical, and empirical modes of inquiry in rhetoric and composition and their implications for the teaching of composition. Prereq: 363 or consent of instructor.

440 The Rhetoric of Legal Discourse (3) Explores basic principles of persuasive writing to legal institutions. Emphasis on the theoretical and logical reasoning with legal language. Prereq: 441 or consent of instructor.

439 Senior Seminar Paper (1) Seminar paper. Credit only. May be repeated. Maximum 6 hours credit. Prereq: Progression to the major.

438 Independent Study (1-6) Tutorial in subjects not usually taught by a professional. May be repeated. Maximum 6 hours. Credit/No Credit grading only. Prereq: Progression to the major. Consent of instructor.

437 Advanced Prose (3) Focuses on writing and analyzing persuasive texts in public, private, and academic contexts. Emphasis on different literary modes and their implications for society. Prereq: 436 or consent of instructor. May have a cumulative GPA of 3.0 or greater for this course.

436 Special Topics (1-6) Study in selected disciplinary or professional areas of Exercise Science. May be repeated. Maximum 6 hours. Progression to the major. Consent of instructor.

435 Independent Physical Activity (3) Emphasis on physical activity as a vehicle for understanding and experiences. Prereq: 434. Consent of instructor.

434 Colloquium (1-6) Designed to help students look at college course in science and technology. May be repeated for a maximum of 6 hours credit. (Same as Biology 434.)

433 Special Topics (1-6) Study in selected disciplinary or professional areas of Exercise Science. May be repeated. Maximum 6 hours. Progression to the major. Consent of instructor.

432 Independent Study (1-6) Tutorial in subjects not usually taught by a professional. May be repeated. Maximum 6 hours. Credit/No Credit grading only. Prereq: Progression to the major. Consent of instructor.

431 Physiology of Exercise (3) Lecture and class meeting with a lab. Focus on the physiological basis of exercise science. Prereq: 355 or consent of instructor. Consent of instructor.

430 Exercise Physiology/Fitness Internship (1-15) Full-time internship in exercise/hall in college course in exercise science. Prereq: 430. Consent of instructor. Consent of instructor.

429 Exercise Science (347) Overview of discipline and professional areas for incoming Exercise Science majors. May have a 3.0 or greater major GPA.

428 Exercise Science Practicum I (3) Practicum experience to support and enhance career goals. Stipends available. Consent of instructor. (Same as Exercise Science 428.)

375 Fitness for Life (2) Discussion and evaluation of fitness and health in terms of occupational and personal health. May have a cumulative total of 2.0 in this course. Consent of instructor.

374 Physical Activity (3) Emphasis on physical activity as a vehicle for understanding and experiences. Prereq: 373 or progression to the major. Consent of instructor. Consent of instructor.

373 Applied Anatomy (3) Structure and function of bones, joints, and muscles in human movement and exercise, related biomechanical principles. Prereq: Junior standing.

372 Disease and Injury: Epidemiological and Demographic Perspectives (3) Disease and injury morbidity and mortality patterns and trends are examined from perspectives of population-based surveillance and actuarial modeling. Completion of college course in statistics or mathematics is recommended.

371 Special Topics (1-3) Study in selected disciplinary or professional areas of Exercise Science. May be repeated. Maximum 6 hours. Progression to the major. Consent of instructor.

363 Foreign Study (1-15) Seeing, studying, and writing about drama as performed in London and Stratford-Upon-Avon during the summer. (Same as English 445.)

362 Writing for Publication (3) Principles and practices of writing for publication. Dissertations, theses, articles, and reports in science and technology. Prereq: 360 or consent of instructor. Consent of instructor.

361 Special Topics (1-3) Study in selected disciplinary or professional areas of Exercise Science. May be repeated. Maximum 6 hours. Progression to the major. Consent of instructor.

355 Electric Behaviors (3) Emphasis on scientific basis of occupational health. Prereq: 354 or consent of instructor. Consent of instructor.

354 Behavior Modification Techniques (3) Emphasis on scientific basis of occupational health. Prereq: 353 or consent of instructor. Consent of instructor.

353 Writing for Publication (3) Principles and practices of writing for publication. Dissertations, theses, articles, and reports in science and technology. Prereq: 360 or consent of instructor. Consent of instructor.

352 Exercise Physiology/Fitness Internship (1-15) Full-time internship in exercise/hall in college course in exercise science. Prereq: 430. Consent of instructor. Consent of instructor.

351 Directed Independent Study (1-6) Independent study in subjects not usually taught by a professional. May be repeated. Maximum 6 hours. Progression to the major. Consent of instructor.
FORESTY, WILDLIFE AND Fisheries (495) 100 Current Issues in Forest Resource Management (3) Current resource issues presented by invited guest speakers. Student discussion and interaction required. Topics will change each semester. Prereq: senior standing, consent of instructor. 3 hrs. Satisfactory/No credit only.

101 Introduction to Forestry, Wildlife and Fisheries (3) High-level overview of forest, wildlife, and fisheries management and resources; their use in social and economic contexts. Prereq: senior standing, consent of instructor. 3 hrs. Satisfactory/No credit only.

Introduction to Forestry, Wildlife and Fisheries (3) High-level overview of forest, wildlife, and fisheries management and resources; their use in social and economic contexts. Prereq: senior standing, consent of instructor. 3 hrs. Satisfactory/No credit only.

FRENCH (405) 111-112 Elementary French (3,3) Language Laboratory. Meets twice a week. Students must be in sequence. Full available to students eligible for French 150.

Intermediate French Transition (3) Preparatory year for students with some French background who must receive a score of 80 or higher on the French Placement Exam or who must receive at least 3 in French. (Coreq: 115.) 5 hrs. Satisfactory/No credit only.
North America and Japan. Students build upon their knowledge of business terminology while being sensitized to cultural differences and the dangers of simplistic stereotyping. Prereq: 345 or consent of the instructor.

190. Internship (1-18) Career-related experience in the United States or abroad with permission of the Language and World Studies Division. For Language and World Business majors only. Satisfaction of 300-499. Prereq: 345 or consent of the instructor.

191. Foreign Study (1-18) Study abroad. Prereq: 345 or consent of the instructor.

195. Independent Study (1-15) Study of a particular subject not covered in other courses. Prereq: 345 or consent of the instructor.

196. Special Topics in Writing (1-15) Study and practice of writing in a particular area. Prereq: 345 or consent of the instructor.

210. Introduction to Computer Mapping (3) Historical development of cartography and early cartographic technology. Digital and hardcopy mapping techniques. 3 hours lecture and 2 hours lab per week. Prereq: 310 and knowledge of a computer language or consent of instructor.

211. Remote Sensing: Types and Applications (3) Principles and uses of remote sensing imagery, digital and spectral data, and spatial models with particular emphasis on geographic information systems and map-making techniques. Prereq: 310 and consent of instructor.

224. Historical Geography of the United States (3) Survey of the changing human geography of the United States during four centuries of settlement and development. Emphasis on changing population patterns, development of agricultural regions, and the effects of cultural landscapes on settlement and development. Prereq: 310 or consent of instructor.

225. Historical Geography of the Commonwealth of Independent States (3) Historical geography of the Commonwealth of Independent States and its successor states. Prereq: 310 or consent of instructor.

227. Historical Geography of South America (3) Physical, cultural, and economic characteristics of the countries of South America. Prereq: 310 or consent of instructor.

230. Quantitative Methods in Geography (3) Geographic application of statistical techniques, point patterns, and spatial models with particular emphasis on geographic information systems and map-making techniques. Prereq: 310 or consent of instructor.
101 The Dynamic Earth (4) Physical processes within and upon the Earth’s surface, including the formation of rocks, plate tectonics and earthquakes, and landscapes. Must be taken in sequence. 3 lecture hours and one 2-hour labor field period.

108, Mathematics 141-142. 3 lecture hours.

188, Principles of Biochemistry. 3 lecture hours, plus one 1-hour lecture and two 2-hour labs.

191 Field Geology (5) Summer field course for advanced undergraduate geology majors and four-year college students in geography, physical geography, and related fields. Prerequisites: completion of other major core courses (310, 320, 330, 340, 370) and consent of instructor. 2 hours and two 2-hour labs.

202 Earth as an Ecosystem: Modern Problems and Solutions (3) Study of the earth as an integrated system between physical and biological processes. Focus on human disturbances such as habitat destruction and pollution. No prerequisites. May not be applied toward the major.

205 Historical Geology of the United States (4) Geology of North America. Includes tectonics, orogeny, and depositional environments. Geologic principle of superposition. Major stratigraphic and paleontologic time boundaries. 3 lecture hours, plus one 1-hour lecture and two 2-hour labs.

210, Mathematics 141-142. 3 lecture hours.

215 Field Geology (5) Summer field course for advanced undergraduate geology majors and four-year college students in geography, physical geography, and related fields. Prerequisites: completion of other major core courses (310, 320, 330, 340, 370) and consent of instructor. 2 hours and two 2-hour labs.

220 Principles of Geology (4) Historical geology, development of the rock record, and the geologic time scale. Prerequisites: 108, Mathematics 141-142. 3 lecture hours, plus one 1-hour lecture and two 2-hour labs.

225 Geology of East Tennessee (3) Geology of the Southern Appalachian Mountains. Prerequisites: completion of other major core courses or consent of instructor. 1 lecture hour and two 2-hour labs.

230 Structural Geology (3) Principles and methods of structural geology, including field techniques, regional geology, and structural geology. Prerequisite: geography 115 or consent of instructor. 3 lecture hours.

231 Principles of Geology 2 (4) Historical geology, development of the rock record, and the geologic time scale. Prerequisites: 108, Mathematics 141-142. 3 lecture hours, plus one 1-hour lecture and two 2-hour labs.

232 Field Geology (5) Summer field course for advanced undergraduate geology majors and four-year college students in geography, physical geography, and related fields. Prerequisites: completion of other major core courses (310, 320, 330, 340, 370) and consent of instructor. 2 hours and two 2-hour labs.

241 Field Geology (5) Summer field course for advanced undergraduate geology majors and four-year college students in geography, physical geography, and related fields. Prerequisites: completion of other major core courses (310, 320, 330, 340, 370) and consent of instructor. 2 hours and two 2-hour labs.

242 Field Geology (5) Summer field course for advanced undergraduate geology majors and four-year college students in geography, physical geography, and related fields. Prerequisites: completion of other major core courses (310, 320, 330, 340, 370) and consent of instructor. 2 hours and two 2-hour labs.

260 Principles of Oceanography (4) Scientific basis of oceanography. Basic physical processes, chemical and biological interactions, and the Earth as an ecosystem. Prerequisites: geography 115 or consent of instructor. 3 lecture hours and one 1-hour laboratory.

261 Principles of Oceanography (4) Scientific basis of oceanography. Basic physical processes, chemical and biological interactions, and the Earth as an ecosystem. Prerequisites: geography 115 or consent of instructor. 3 lecture hours and one 1-hour laboratory.

270 Principles of Oceanography (4) Scientific basis of oceanography. Basic physical processes, chemical and biological interactions, and the Earth as an ecosystem. Prerequisites: geography 115 or consent of instructor. 3 lecture hours and one 1-hour laboratory.

280 Principles of Oceanography (4) Scientific basis of oceanography. Basic physical processes, chemical and biological interactions, and the Earth as an ecosystem. Prerequisites: geography 115 or consent of instructor. 3 lecture hours and one 1-hour laboratory.
11 Local Language (B)

112 Language Laboratory (b)

160 Elementary German Transition (3) This course is designed to prepare students for enrollment in German 101. Prereq: Two years of high school German and a placement test which is geared toward preparing students for the first-year German course. Must be taken with the consent of the instructor. Students who are new to German cannot receive credit for this course. Must be taken in sequence. Not available for the 150 level. Must be taken in sequence. Not available for the 150 level.

161 Advanced German Transition (3) This course is designed to prepare students for enrollment in German 101. Prereq: Two years of high school German and a placement test which is geared toward preparing students for the first-year German course. Must be taken with the consent of the instructor. Students who are new to German cannot receive credit for this course. Must be taken in sequence. Not available for the 150 level. Must be taken in sequence. Not available for the 150 level.

185 Critical Reading in German from the Earliest Days to the Present: Custom, Art, Literature, Society, State, History (2-3) This course is designed to prepare students for enrollment in German 101. Prereq: Two years of high school German and a placement test which is geared toward preparing students for the first-year German course. Must be taken with the consent of the instructor. Students who are new to German cannot receive credit for this course. Must be taken in sequence. Not available for the 150 level. Must be taken in sequence. Not available for the 150 level.

189 German Language and World Business (2) The course will cover the development of the modern German language and its influence on world commerce and culture. Prereq: Two years of high school German and a placement test which is geared toward preparing students for the first-year German course. Must be taken with the consent of the instructor. Students who are new to German cannot receive credit for this course. Must be taken in sequence. Not available for the 150 level. Must be taken in sequence. Not available for the 150 level.

201-202 Intermediate German (3,3) Must be taken in sequence. Maximum 6 hours.

215 German, Special Topics (3) Content varies. May be repeated for credit. Maximum 6 hours.

230 German-Jewish Topics in Literature and Culture (3) Selected themes, issues, topics, movements, and pedagogy in the German-Jewish relationship as reflected in literature and culture from the 1700s to the present. Variable content. Available for both majors and non-majors. May be repeated with the approval of the department. Prereq: 202 or 203 (300 level). Primary department is German.

233 Modern German Culture (2) German culture from the mid-nineteenth century to the present: customs, art, music, literature, society, state, history. Prereq: Two years of German and consent of instructor. Majors and non-majors in German majors. May be repeated with the approval of the department. Prereq: 202 or 203 (300 level). Primary department is German.

235 Advanced German (3) Preparatory course for upper-division German courses. Prereq: German 301 and consent of instructor.

240 Intermediate German: Grammar Review and Readings (2) (3) Syllabus varies by instructor. Required of students entering advanced German courses. Prereq: 202 or 203 (300 level).
2421-2422 History of the United States (3,3) 2421-Settlement to 1877. 2422-1877 to present. Emphasis on economic, political, and social trends.


2425-2426 United States History (3,3) 2425-The Civil War. 2426-The Post-Civil War Era. Emphasis on Reconstruction and the Gilded Age.


2433-2434 United States History (3,3) 2433-The 1960s. 2434-The 1970s. Emphasis on social movements and cultural changes.

2435-2436 United States History (3,3) 2435-The 1980s. 2436-The 1990s. Emphasis on globalization and the information age.

2437-2438 United States History (3,3) 2437-The 2000s. 2438-The 2010s. Emphasis on the 21st century and current events.

2439-2440 United States History (3,3) 2439-The 2020s. 2440-The 2030s. Emphasis on contemporary issues and future trends.
418 History of American Culture (3) Topical examination of the origins and development of American culture, including art, literature, music, and everyday life from the founding of the country to the present. Illustrative topics: creation of a national culture; Civil War as cultural conflict; challenge of pluralism; rural versus urban, cultural upheaval 1920-30, present nature of American culture. Writing-emphasis course.

419 History of Tennessee (2) Tennessee's history from the 18th century to the present.

420 History of U.S. Foreign Relations to World War II (3) Examines the theory and practice of U.S. foreign policy, especially on the role of the United States as a superpower in the international system and the effects of cold war. Writing-emphasis course.

421 History of U.S. Foreign Relations in the Post-War World (3) Examines the evolution of policies and practices of the U.S. in the post—1945 world, including the role of the United States as a superpower in the international system. Writing-emphasis course.

422 History of the World's Religions (3) Survey of world religions and their roles in world history, especially from the Bronze Age through the present.

423 History of Science and technology (3) Historiographical survey of the history of science and technology, including the influence of political and economic factors on scientific development and the impact of science and technology on society. Writing-emphasis course.

424 History of the United States (3) Development of the United States as a nation, emphasizing the factors that contributed to its development from colonial period to present. Emphasis on social, cultural, economic and political developments. Writing-emphasis course.

425 History of the United States and Canada (3) Development of the United States and Canada as nations, emphasizing the factors that contributed to their development from colonial period to present. Emphasis on social, cultural, economic and political developments. Writing-emphasis course.

426 History of the United States and Europe (3) Development of the United States and Europe as nations, emphasizing the factors that contributed to their development from colonial period to present. Emphasis on social, cultural, economic and political developments. Writing-emphasis course.

427 History of the United States in the Twentieth Century (3) Development of the United States in the twentieth century, focusing on social, cultural, economic and political developments. Writing-emphasis course.

428 History of W.E.B. Du Bois (3) Development of the life and works of W.E.B. Du Bois, emphasizing the factors that contributed to his development as a social and intellectual leader. Writing-emphasis course.

429 Medieval Intellectual History (3) Evolution of thought in Europe from late antiquity to the advent of humanism, especially concerning major religions (Christian, Judaism, and Islam) and their social, economic, and political consequences. Writing-emphasis course.

430 Renaissance and Imaging in Early Modern Europe (3) Religious life of Renaissance society, emphasizing the role of religion in shaping the cultural and political life of the time. Writing-emphasis course.

431 English Intellectual History (3) Evolution of thought in England from late antiquity to the advent of humanism, especially concerning major religions (Christian, Judaism, and Islam) and their social, economic, and political consequences. Writing-emphasis course.

432 African-American Intellectual History (3) Evolution of thought in Africa from late antiquity to the advent of humanism, especially concerning major religions (Christian, Judaism, and Islam) and their social, economic, and political consequences. Writing-emphasis course.

433-434 American Intellectual History (3) Evolution of thought in the United States from late antiquity to the advent of humanism, especially concerning major religions (Christian, Judaism, and Islam) and their social, economic, and political consequences. Writing-emphasis course.

435 Modern Intellectual History (3) Evolution of thought in the modern world from late antiquity to the advent of humanism, especially concerning major religions (Christian, Judaism, and Islam) and their social, economic, and political consequences. Writing-emphasis course.

436 Imperial Intellectual History (3) Evolution of thought in the imperial world from late antiquity to the advent of humanism, especially concerning major religions (Christian, Judaism, and Islam) and their social, economic, and political consequences. Writing-emphasis course.

437 Intellectual History of the U.S. (3) Evolution of thought in the United States from late antiquity to the advent of humanism, especially concerning major religions (Christian, Judaism, and Islam) and their social, economic, and political consequences. Writing-emphasis course.

438 Intellectual History of the U.S. (3) Evolution of thought in the United States from late antiquity to the advent of humanism, especially concerning major religions (Christian, Judaism, and Islam) and their social, economic, and political consequences. Writing-emphasis course.

439 Intellectual History of the U.S. (3) Evolution of thought in the United States from late antiquity to the advent of humanism, especially concerning major religions (Christian, Judaism, and Islam) and their social, economic, and political consequences. Writing-emphasis course.

440 Intellectual History of the U.S. (3) Evolution of thought in the United States from late antiquity to the advent of humanism, especially concerning major religions (Christian, Judaism, and Islam) and their social, economic, and political consequences. Writing-emphasis course.

441 The American Frontier and Westward Movement (3) Evolution of thought in the United States from late antiquity to the advent of humanism, especially concerning major religions (Christian, Judaism, and Islam) and their social, economic, and political consequences. Writing-emphasis course.

114 | Managing Occupational Education Programs: Unique needs of institutions of occupational education: mechanisms and accountability; resource management; preparation of instruction; pedagogical issues; and adapting instruction for special needs learners.

115 | Coordinated Instruction (2): Coordinated procedures, duties and responsibilities to implement, maintain, and evaluate a successful cooperative education program.

412 | Adult Education Program Design and Management (3): Processes of program development and special application to adult training programs.

413 | Adult Development and Training (3): Application of adult development concepts to design and management of training programs for adults.

430 | Human Services Methodologies I (3): Basic helping skills as related to the effective delivery of human services. Prereq: Progression to the major; 350, 352; Coreq: 410.

440 | Working with the System II (3): Supervised experience in human services settings. Prereq: Progression to the major; 350, 352, Coreq: 410.

441 | Directed Study in Family and Consumer Sciences Education (1-3): Preparation for teaching and managing secondary school programs in Family and Consumer Sciences Education. May be repeated for a maximum of 6 hours. Prereq: 430, Coreq: 410.

490 Information Environment (3) Generation, production, management, dissemination, and use of information. Roles of information in social services and technological change, information professions, and professions related to information services. Three hours lecture. E, Su-A

100 Selected Topics (1-3) May be repeated. Maximum 12 hours. E

485 Electronic Communication and Information Resources on the Internet (3) Exploration of worldwide information and communication resources including gopher, Archie, Veronica, WAIS, WWW, and newsgroups. Three hours lecture. E

475 Utilization of Instructional Media (3) Same as Educational Curriculum and Instruction 475. E

Technologies for Information Retrieval (3) Principles, selection, and use of computer-based information management applications; software identification and task appropriate uses; telecommunications, util-, and library management systems; multimedia oper- ating systems and technology for national network con- nections; information services via computers. Under- graduate credit only. S

494 Directed Studies in Environmental Design (1-3) Independent research in environmental design. Prerequisite: consent of instructor. E

493 Directed Studies in Interior Design (1-4) Student or staff initiated research or studio investigation of special topic. Elective credit only. May be repeated. Maximum 8 hours. Prerequisite: consent of instructor. E

492 Off-Campus Studies (1-15) Registration by permission of director of Interdisciplinary Studies. F

ITALIAN (584)

494 Directed Studies in Environmental Design (1-3) Independent research in environmental design. Prerequisite: consent of instructor. E

493 Directed Studies in Interior Design (1-4) Student or staff initiated research or studio investigation of special topic. Elective credit only. May be repeated. Maximum 8 hours. Prerequisite: consent of instructor. E

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493 Directed Studies in Interior Design (1-4) Student or staff initiated research or studio investigation of special topic. Elective credit only. May be repeated. Maximum 8 hours. Prerequisite: consent of instructor. E

492 Off-Campus Studies (1-15) Registration by permission of director of Interdisciplinary Studies. F
280 Communications Graphics (3) Principles and practice in the visual aspects of communication. Emphasis on technical and design principles, illustration and photography, printing and production techniques, and computerized graphics. Lecture and studio. Prerequisite: 200 or consent of instructor.

290 Photopreneurs (3) Principles and practice of photography as a creative tool of communication. Basic instruction in black and white and color photography, laboratory and field. Prerequisite: 212 or equivalent.

310 Feature Writing (3) Skills of journalism for writing feature articles for newspapers, magazines and other periodicals. Group work in writing feature articles as they are assigned. Prerequisite: 212 or equivalent.

320 Reporting (3) Gathering news about business and government for publication. Emphasis on the interpretation of financial documents. Prerequisite: 212 or equivalent.

312 Renaissance Medieval Culture (3) Introduction to the significance of this great Italian writer. Prerequisite: 212 or equivalent.

Prereq: 212 or equivalent. Review of grammatical principles and their application in translation from English to Italian, both written and oral. Exercises in free composition. Prerequisite: 212 or equivalent.

341-342 Intermedici Grammar, Composition and Conversations (2) Grammar and analytical study of Italian prose; review of grammatical principles and their application in translation from English to Italian both written and oral. Exercises in free composition. Prerequisite: 212 or equivalent.

311 Dante and Medieval Culture (3) Introduction to the significance of this great Italian writer. Prerequisite: 212 or equivalent.

360 Reporting (3) Gathering news about business and government for publication. Emphasis on the interpretation of financial documents. Prerequisite: 212 or equivalent.

Prereq: 212 or equivalent. Review of grammatical principles and their application in translation from English to Italian, both written and oral. Exercises in free composition. Prerequisite: 212 or equivalent.

411 Dante and Medieval Culture (3) Introduction to the significance of this great Italian writer. Prerequisite: 212 or equivalent.

341-342 Intermedici Grammar, Composition and Conversations (2) Grammar and analytical study of Italian prose; review of grammatical principles and their application in translation from English to Italian both written and oral. Exercises in free composition. Prerequisite: 212 or equivalent.

Prereq: 212 or equivalent. Review of grammatical principles and their application in translation from English to Italian both written and oral. Exercises in free composition. Prerequisite: 212 or equivalent.

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411 Dante and Medieval Culture (3) Introduction to the significance of this great Italian writer. Prerequisite: 212 or equivalent.
LATIN (257)

115-116 Beginning Latin (3) Must be taken in se- quence. Not available to students eligible for Latin 110.

190 Latin Transition (2) This course is designed to prepare students for enrollment in Latin 251. Prereq: Two years of high school Latin and a Latin on the placement exam taken before that require admission to admission to Latin 251. Students who receive credit in this course may not also receive credit for any other 100-level Latin course and therefore also forfeit the six hours of elementary lan- guage credit awarded through placement examination.

261 Intermediate Latin: Grammar Review and Readings (3) Prereq: 112 or 150 or placement through the Latin placement examination.

262 Intermediate Latin: Vorgis' Aenari (3) Prereq: 251 or equivalent.

310 Cisalpino-Sereno (3) Prereq: 251 or equivalent.

311 Roman and Latin Literature (3) Poetry of Calude, Hor- ace, and the elegists. Prereq: 251 or equivalent.

410 and 411 Directed Readings in Latin Prose Compos- ition (3) For advanced students in Latin. Practice in prose composition, the writings of Cicero the model. Prereq: 310-320 or consent of instructor.

431-432 Selected Readings from Latin Literature (3) Development of Western linguistic thought from the Hebrews and Greeks through modern times. Each term will be internetaccessible with access control.

435 Medieval Latin (3) Selected readings from the Latin literature. Satisfactory/No Credit grading only.

437-438 The Structure of Modern English (3) (Same as English 437-438.)

440 Selected Readings in Brazilian and Portuguese Literature (3) (Same as Portuguese 440.)

450 Latin American Government and Politics (3) (Same as Politics 450.)

451 Directed Readings in Brazilian and Portuguese Literature (3) (Same as Portuguese 451.)

453-454 Survey of Spanish American Literature (3) (Same as Spanish 453-454.)

457 Studies in Latin American History (3) (Same as History 457.)

464 Selected Readings in Latin American Social Science (3) (Same as Spanish 464.)

469 Latin American History in Film (3) (Same as History 469.)

470 Roman Civilization (3) (Same as History 470.)

471 Latin American Civilization (3) (Same as Spanish 471.)

472-473 The Structure of Modern English (3) (Same as English 472-473.)

474-475 Survey of Spanish American Literature (3) (Same as Spanish 474-475.)

476 Studies in Latin American History (3) (Same as History 476.)

476 Latin American Film and Culture (3) (Same as Hispanics and Classics 476.)

477 Social Protest Literature of Latin America (3) (Same as Spanish 477.)

479 Foreign Study (1-15)

480 Off-Campus Study (1-15)

481 Independent Study (1-15)

LEADERSHIP STUDIES (615)

200 Student Leadership Development (3) Designed for students interested in leadership who have III and III include theoretical and experiential components. Prereq: Consent of instructor.

211 Foundations of the English Language (3) (Same as Spanish 211.)

231 The Modern Latin American History (3) (Same as History 231.)

232 The Structure of Modern English (3) (Same as English 232.)

234 Topics in Linguistics (3) (Same as Anthropology 232.)

243 The Development of Spanish and Portuguese (3) (Same as Spanish 243.)

252 Introduction to Descriptive Linguistics (3) (Same as English 252.)

253 Morphological and Compositional Linguistics (3) (Same as English 253.)

257 Methods of Teaching Composition, Language, and Literature. Prereq: Admission to Teacher Education Program.

321 Teaching Reading and Literature in the Secondary School (3) Teaching basic reading skills and literature. Prereq: Completion of Teacher Education Program.

322 Teaching Reading and Literature in the Secondary School (3) Teaching basic reading skills and literature. Prereq: Completion of Teacher Education Program.

424 Developing Reading Skills in Context (3) Teaching reading and study skills in context of the content area. Each course will be internetaccessible with access control.

425 Introduction to Descriptive Linguistics (3) (Same as English 425.)

426 Methods of Historical Linguistics (3) (Same as English 426.)

427 Phonological and Compositional Linguistics (3) (Same as English 427.)

428 History of the German Language (3) (Same as German 428.)

429 Sociolinguistics (3) (Same as English 429.)

432 Directed Readings in Brazilian and Portuguese Literature (3) (Same as Portuguese 432.)

435 Medieval Latin (3) (Same as Spanish 435.)

436 History of the German Language (3) (Same as German 436.)

437 Geography of South America (3) (Same as Geography 437.)

438 History of the German Language (3) (Same as German 438.)

446 Cultural Pluralism and Institutional Changes in Latin America (3) (Same as Hispanic and Classical 446.)

447 Latin American Government and Politics (3) (Same as Politics 447.)

448 Latin American Studies Seminar (3) (Same as Sociology 448.)

450 Latin American History in Film (3) (Same as History 450.)

451 Discussion of current problem area in linguistics and trans- portation. Topic announced prior to offering. May be re-peated for credit. Prereq: Consent of instructor.

452 Logistics and Transportation Analytical Meth- ods (3) Introduction to the principles and tools used in the analysis of analytical tools to logistics and transportation prob- lems, using analytical methods to support negotiations.

453 Global Logistics and Transportation (3) (Same as Spanish 453.)

454 Logistics and Transportation Technology (3) Development of Western linguistic thought from the Hebrews and Greeks through modern times. Prereq: Consent of instructor.

455 Latin American Government and Politics (3) (Same as Politics 455.)

456 Teaching Speech and Drama, Grades 7-12 (3) (Same as English 456.)

457 Latin American History in Film (3) (Same as History 457.)

458 Language and Law (3) (Same as English 458.)

459 Foreign Study (1-15)

460 Language and Law (3) (Same as English 460.)

461 Developing Reading Skills in Content Fields (3) (Same as Education 461.)

462 Teaching Reading and Study Skills in Content Areas of the Secondary School (3) (Same as Education 462.)
trolof operation systems. Aggregate planning; scheduling.

440 Organizational Psychology (3) (Same as Psychology 431: Personnel Management (3) Theory, methods and concepts. Prereq: STAT 201, MGT 301. F, S.

Successfully implement and sustain a TOM philosophy, organizational forecasting. Prereq: 301, Statistics 201. F, S.

341 Operations Management I (3) Design of operations systems. Process improvement and analysis techniques related to production, service operations, and decision making. Emphasis on organizational strategy which will assist the organization to reach objectives. Major writing requirement. Prereq: Consent of instructor. Business and economics majors, and science and engineering students registering for 144 must also be registered for Marketing 310.

321 Organizational Structure and Behavior (3) Behavioral principles and concepts of group behavior, informal organizations, organizational structure, conflict, politics, change and behavioral processes in organizations; motivation, leadership, decision making, communication; behavioral and cognitive aspects of team effectiveness. May be repeated onetime for credit.

Special Projects (1-6) Directed research on an individual basis. May be repeated onetime for credit. Special problems. Prereq: Consent of instructor. No credit grading only. Prereq: Consent of instructor.

492 Marketing Off-Campus Study (1-6) Satisfactory/unsatisfactory. Prereq: Marketing 310.

125 Basic Calculus (3) For students not planning to major in the physical sciences, engineering, mathematics, or computer science. Exponential and logarithmic functions, integration, and differential equations. Emphasis on applications in the life sciences. Includes computer projects. Prereq: Two years of algebra and one year of geometry in high school plus satisfactory placement test score, or 119 or 110.

141-142 Calculus I, II (4,4) Standard freshman year calculus. Prereq: Two years of algebra, a year of geometry, and good performance on entrance tests. Students who have earned a grade of C or better in 141-142 may not subsequently receive credit for 123-125. Prereq: Two years of algebra, a year of geometry, and a year of trigonometry in high school, plus satisfactory placement test score, or 119 or 110.

493 Independent Study (1-6) Directed research on an individual basis. May be repeated onetime for credit. Special problems. Prereq: Consent of instructor. No credit grading only. Prereq: Consent of instructor.

115 Statistical Reasoning (3) An introduction to probability and statistics. Topics include: descriptive statistics, data collection, and basics of probability theory. Students who have received a grade of C or better in 241 may not subsequently receive credit for 251. Prereq: Two years of algebra and one year of geometry in high school plus satisfactory placement test score, or 119 or 110.

119 College Algebra (3) A review of algebraic functions, equations, and inequalities for students who sat- isfy the course prerequisites for 125 or 120 but whose placement test score indicated additional preparation is needed. Credit for 119 will not be given if better than a score of 125 is obtained for Math 125. Prereq: Two years of algebra and one year of geometry in high school plus satisfactory placement test score, or Math 119.

410 Advertising Management (3) Business skills involving budgeting, ad placement, account representation, strategic planning, measuring ad effectiveness, advertisement and magazine design. Emphasis on organizational strategies and decisional promotion of the environment. Prereq: Accounting 301, Economics 301, Marketing 301, and Marketing 310, or consent of instructor.

320 Sales Force Management (3) Personal selling function and its impact in the business firm. Topics include the activities and problems of top line sales. Topics include organizational psychology including purchasing, terminology, territory design, and evaluation. Prereq: Marketing 201 and Statistics 201.

420 Sales Management (3) Approaches for finding markets and evaluating them for opportunity. Prereq: Marketing 301 and Statistics 201.

301 Principles of Marketing (3) Practical applications of marketing planning and evaluating and testing personal programs. Prereq: Marketing 301.

110 Algebraic Reasoning (3) A course in the application of elementary mathematics to life in the modern world. Includes applications in financial mathematics, consumer mathematics, and other areas. Students who have received a grade of C or better in Math 119, 130, or 141 at a college in which the course was taken may be taken for transfer credit. May be taken for three SHC grading.

125 Basic Calculus (3) For students not planning to major in the physical sciences, engineering, mathematics, or computer science. Exponential and logarithmic functions, integration, and differential equations. Emphasis on applications in the life sciences. Includes computer projects. Prereq: Two years of algebra and one year of geometry in high school plus satisfactory placement test score, or 119 or 110.

141-142 Calculus I, II (4,4) Standard freshman year calculus. Prereq: Two years of algebra, a year of geometry, and good performance on entrance tests. Students who have earned a grade of C or better in 141-142 may not subsequently receive credit for 123-125. Prereq: Two years of algebra, a year of geometry, and a year of trigonometry in high school, plus satisfactory placement test score, or 119 or 110.

125 Basic Calculus (3) For students not planning to major in the physical sciences, engineering, mathematics, or computer science. Exponential and logarithmic functions, integration, and differential equations. Emphasis on applications in the life sciences. Includes computer projects. Prereq: Two years of algebra and one year of geometry in high school plus satisfactory placement test score, or 119 or 110.

141-142 Calculus I, II (4,4) Standard freshman year calculus. Prereq: Two years of algebra, a year of geometry, and good performance on entrance tests. Students who have earned a grade of C or better in 141-142 may not subsequently receive credit for 123-125. Prereq: Two years of algebra, a year of geometry, and a year of trigonometry in high school, plus satisfactory placement test score, or 119 or 110.
201 Differential Equations I (3) First course, emphasis on applications of first and second order equations and solutions and applications. Theory of these equations, solutions with constant coefficients. Laplace transforms, and series solutions. Prereq: 142 or 148.

203 Probability and Statistical Inference (3) Probability distributions, sampling distributions, parameter estimation, hypothesis testing, linear models, and regression. Prereq: 251 or 257.

205 Complex Variables I (3) Functions of a complex variable, integration of functions, series, residues and conformal mappings. Prereq: 241 or 247.

241 Analysis I (3) Introduction to the theory of the real number system, limits of sequences, and functions of a real variable. Prereq: 241 or 247.

273 Modern Algebra II (3) Ring theory, field theory, polynomial rings, and matrix algebra. Prereq: 251 or 257.

301 History of Mathematics (3) Development of major mathematical concepts in Europe and the Orient. Prereq: 148 or 152. No Credit only.


307 Honors: Modern Algebra I (3) Advanced course in abstract algebra, stressing proof technique and critical reasoning. Models, axioms, and the significance and correlation of laboratory data. Includes an introduction to modern algebra with a focus on rings, fields, and matrices. Prereq: 251 or 257.


332 Probability and Statistical Inference II (3) Theory of estimation of parameters of a complex variable, including the method of maximum likelihood, properties of estimators, and hypothesis testing. Prereq: 241 or 247.

340 Complex Variables II (3) Applications of complex variable theory to fluid mechanics, electricity, and mechanics. Prereq: 241 or 247.

346 Advanced Calculus I (3) Introduction to the theory of functions of one variable, including differentiation and integration of functions of one or more variables. Prereq: 241 or 247.

347 Advanced Calculus II (3) Functions of several variables, higher order partial derivatives, gradients, and multiple integrals. Prereq: 241 or 247.

359 Advanced Topics in Mathematics (3) May be repeated. Maximum 9 hours. Prereq: Consent of instructor.

410-411 Microbiology (4,4) Laboratory work in bacteriology, virology, and mycology. Emphasis on diagnostic techniques and laboratory procedures. Prereq: 171 or C.S.101, or C.S.102. Recommended: 453. (Same as Computer Science 472.)

447-448 Honors: Advanced Calculus I, II (3,3) Functions of several variables, vector fields, line integrals, multiple integrals, Green's, Gauss', and Stokes' theorems. Prereq: 241 or 247, or consent of instructor.

453 Matrix Algebra II (3) Advanced topics in linear algebra, including the Jordan canonical form. Prereq: 251 or 257.

455-456 Advanced Calculus 1,11 (3,3) Introduction to the theory of functions of several variables, including differentiation, integration of functions of one or more variables. Prereq: 241 or 247, or consent of instructor.

460 Geometry (3) Axiomatic and historical development of Euclidean, spherical, hyperbolic, and non-Euclidean geometries. Prereq: 300, or consent of instructor.

467 Numerical Analysis (3) Study of numerical techniques, including roundoff error, approximation, interpolation and least squares. Prereq: 241 or 247.

468 Topics in Numerical Analysis (3) Includes advanced topics in numerical analysis such as numerical integration, numerical solutions of differential equations, and error analysis. Prereq: 371, or consent of instructor.

443 History and Philosophy of Science (3) Survey of major developments in scientific thought from the Greeks to modern times. Prereq: Consent of instructor. May be repeated. Maximum 9 hours. Prereq: Consent of instructor.

482 Seminar in Mathematics (1-3) Topic of current interest. May be repeated. Maximum 9 hours. Prereq: Consent of instructor.
490 Special Topics in Music Education (1-3) Prereq: consent of instructor. May be repeated. Maximum 9 hours.
409-499 Jazz Ensemble (1-1) May be repeated. Maximum 12 hours.
409-599 Trombone Choir (1) May be repeated. Maximum 12 hours.
409-598 French Horn Choir (1) May be repeated. Maximum 12 hours.
409-597 Senior Wind Ensemble (1-1) May be repeated. Maximum 12 hours.
409-596 Marching Band (1) May be repeated. Maximum 12 hours.
409-595 Pep Band (1) May be repeated. Maximum 12 hours.
409-594 Percussion Ensemble (1-1) May be repeated. Maximum 12 hours.
409-593 Symphonic Band (1-1) May be repeated. Maximum 12 hours.
409-592 Wind Ensemble (1-1) May be repeated. Maximum 12 hours.
409-591 Marching Band (1) May be repeated. Maximum 12 hours.
409-590 Concert Band (1) May be repeated. Maximum 12 hours.
409-589 Women's Chorale (1,1) May be repeated. Maximum 12 hours.
409-588 Concert Choir (1,1) May be repeated. Maximum 12 hours.
409-587 Symphony Orchestra (1,1) May be repeated. Maximum 12 hours.
409-586 University Chorus (1,1) May be repeated. Maximum 12 hours.
409-585 Choral Techniques (1) May be repeated. Maximum 12 hours.
409-584 Vocal Improvisation (1,1) May be repeated. Maximum 12 hours.
409-583-582 Chamber Music Ensemble (1,1) May be repeated. Maximum 12 hours.
409-581 Small Jazz Ensemble (1,1) May be repeated. Maximum 12 hours.
409-579 Steel Band (1,1) May be repeated. Maximum 12 hours.
409-578 Marching Band (1,1) May be repeated. Maximum 12 hours.
409-577 Symphony Orchestra (1,1) May be repeated. Maximum 12 hours.
409-576 Concert Choir (1,1) May be repeated. Maximum 12 hours.
409-575 Women's Chorale (1,1) May be repeated. Maximum 12 hours.
409-574-573 Choral Techniques (1,1) May be repeated. Maximum 12 hours.
409-572-571 Conducting Ensemble (1,1) May be repeated. Maximum 12 hours.
409-570-569 Concert Band (1,1) May be repeated. Maximum 12 hours.
409-568-567 Marching Band (1,1) May be repeated. Maximum 12 hours.
409-566 University Chorus (1,1) May be repeated. Maximum 12 hours.
409-565 Choral Techniques (1) May be repeated. Maximum 12 hours.
409-564-563 Chorus (1,1) May be repeated. Maximum 12 hours.
409-561 Opera Theatre (1,1) May be repeated. Maximum 12 hours.
409-559-558 Wind Ensemble (1,1) May be repeated. Maximum 12 hours.
409-558 Marching Band (1) May be repeated. Maximum 12 hours.
409-557 Concert Choir (1,1) May be repeated. Maximum 12 hours.
409-556 Steel Band (1,1) May be repeated. Maximum 12 hours.
409-555-554 University Chorus (1,1) May be repeated. Maximum 12 hours.
409-554-553 Chamber Music Ensemble (1,1) May be repeated. Maximum 12 hours.
409-553 Small Jazz Ensemble (1,1) May be repeated. Maximum 12 hours.
409-552 Musicianship (1,1) May be repeated. Maximum 12 hours.
409-551-550 Concert Band (1,1) May be repeated. Maximum 12 hours.
409-549-548 Marching Band (1,1) May be repeated. Maximum 12 hours.
409-547-546 Concert Choir (1,1) May be repeated. Maximum 12 hours.
409-545-544 University Chorus (1,1) May be repeated. Maximum 12 hours.
409-543-542 Choral Techniques (1,1) May be repeated. Maximum 12 hours.
409-541-540 Opera Theatre (1,1) May be repeated. Maximum 12 hours.
409-539-538 Wind Ensemble (1,1) May be repeated. Maximum 12 hours.
409-537-536 Marching Band (1,1) May be repeated. Maximum 12 hours.
409-535-534 Concert Choir (1,1) May be repeated. Maximum 12 hours.
409-533-532 University Chorus (1,1) May be repeated. Maximum 12 hours.