171 Introduction to Twentieth Century Art (3) History of development of modernism from Surrealism through Abstract Expressionism; Pop Art; Post-Thirdly Abstraction, Op Art; Kinetic Art; Happenings, Environment; Conceptual Art; Minimal Art; and Deconstructivism.

172 Western Art (3) Major monuments in Western Art with emphasis on European prehistory through the Middle Ages. Writing-emphasis course.

173 Western Art (3) Major monuments in Western Art with emphasis on Europe and America from 1400 to the early 20th century. Writing-emphasis course.

183 Asian Art (3) Art of Central and Southeast Asia, India, China, Korea, and Japan from prehistory through common Buddhist forms and into modern media. Writing-emphasis course.

191 Introduction to Studio Art: Various Media (3) Individual sections for various artistic disciplines. For non-majors only. Course may be repeated; maximum may not be repeated. Maximum 12 hours. Writing-emphasis course.


202 Two-Dimensional Fiber (3) Mixed media approach for woven imagery. Tapestry/non-tapestry methods, traditional/alternative media, small scale works.


209 Special Topics in Fiber and Fabric (3) Student or instructor-initiated course offered at convenience of department. Prereq: Determined by department for individual topic. May be repeated. Maximum 12 hours.


212 Drawing II: Life Drawing (3) Development of drawing and observational skills with special emphasis on structure, proportion, and the human figure and the figure in environment. Prereq: 211. May be repeated. Maximum 6 hours.

213 Painting I: Introduction (3) Capacities of oil and acrylic painting on canvas. Prereq: 101, 103 for art majors; none for non-majors.

214 Painting II (3) Techniques of expression in oil and/or acrylic. Prereq: 213 for art majors; 191-Painting for non-majors. May be repeated. Maximum 6 hours.


216 Watercolor II (3) Capacities of transparent watercolor, with emphasis on the expression of surface, space, and concept. Prereq: 215 for art majors; Art 191-Watercolor for non-art majors. May be repeated. Maximum 6 hours.

219 Special Topics in Drawing/Painting (3) Student or instructor-initiated course offered at convenience of department. Prereq: Determined by department for individual topic. May be repeated. Maximum 12 hours.

221 Ceramics: Handbuilding (3) All ceramics and handbuilding techniques including forming methods, glazing, clay preparation, firing, small and large scale pieces. Ceramic history through slide lectures.

222 Ceramic II: Throwing (3) Thrown ceramic forms including functional techniques, materials, and techniques, glazing and firing methods. Prereq: 221 for art majors; 191-Ceramics for non-art majors.

229 Special Topics in Ceramics (3) Student or instructor-initiated course offered at convenience of department. Prereq: Determined by department for individual topic. May be repeated. Maximum 12 hours.

231 Photography I (Art of black and white photography. Field and studio shooting, history of photography, basic developing, and enlarging techniques.

239 Special Topics in Photography (3) Student or instructor-initiated course offered at convenience of department. Prereq: Determined by department for individual topic. May be repeated. Maximum 12 hours.
ART ARROWMONT PI BETA PHI SCHOOL OF ARTS AND CRAFTS

Courses of Instruction

153

Determined by department for individual topic. May be repeated. Maximum 12 hours.

ART EDUCATION (141)

301 Foundation of Art Education (3) Basic philosophy and structure including directed learning activities in two and three dimensional design, art appreciation, and teaching methodology. Prereq: Admission to Teacher Education Program. F, Sp

302 Concepts of Drawing and Painting (3) Processes in teaching drawing and painting including consideration of pertinent literature and research. F, Sp

303 Concepts of Sculpture and Crafts (3) Processes in teaching of sculpture and crafts including pertinent literature and research. Prereq: 301 and admission to Teacher Education Program. F

304 Concepts of Printmaking, Graphic Design and Lettering (3) Processes in teaching printmaking, graphic design and lettering including pertinent literature and research. Prereq: 301 and admission to Teacher Education Program. F

305 Field Experience (1) Tasks related to teaching and to teacher roles. May be repeated. Maximum 2 hours. Prereq: Admission to Teacher Education Program. Satisfactory/No credit only. Sp

306 Curriculum Planning and Teaching Strategies (3) Program development, instructional methods, professional literature, contemporary issues, simulation and micro teaching situations. Prereq: 301 and admission to Teacher Education Program. F, Sp

410 Pre-Internship Seminar (1) Orientation describes the objectives and policies of the internship program. Must be completed immediately preceding the internship. Prereq: Admission to Teacher Education Program. Satisfactory/No credit only. F, Sp

411 Internship I: Grades K-12 (3-6) Test of materials and theories of teaching. Internship is completed in local public schools. Application for internship should be made upon admission to Teacher Education Program. Prereq: 410 and permission to Teacher Education Program. Satisfactory/No credit only. F

412 Internship II: Grades K-12 (3-6) Demonstration of professional competence in planning, instruction and classroom management. Internship is completed in local public schools. Prereq: 481 and admission to Teacher Education Program. Satisfactory/No credit only. Sp

490 Special Topics (3) May be repeated. Maximum 6 hours.

493 Independent Study (3) May be repeated. Maximum 9 hours.

ARTIST NEWS (144)

131-132 Elementary Chinese I, II (5,5) Must be taken in sequence. F, Sp

151-152 Elementary Japanese I, II (5,5) Must be taken in sequence. F, Sp

161-162 Elementary Persian (4,4) Taped language program. Must be taken in sequence.

195 Japanese Language and World Business (3) The course will examine the importance of foreign trade at the local, state, and national level. An interdisciplinary team of faculty from the Colleges of Business Administration and Arts and Sciences will provide an overview of the value of language study and international cultural awareness in world business. Restricted to students majoring in the Language and World Business major concentration. Satisfactory/No credit only. F, Sp

231-232 Intermediate Chinese I, II (5,5) Prereq: 131-132 or equivalent or consent of instructor. Must be taken in sequence.

251-252 Intermediate Japanese I, II (5,5) Prereq: 151-152 or consent of instructor. Must be taken in sequence. F, Sp

311-312 Chinese Literature in English Translation (3,3) 311-Classical literature, 312-Modern literature. Writing-emphasis course.


331-332 Advanced Chinese I, II (4,4) Prereq: 231-232 or equivalent or consent of instructor. Must be taken in sequence.

351-352 Advanced Japanese I, II (4,4) Includes concentration, drill, and composition practice with native speaker as well as reading and translation. Prereq: 251-252. Must be taken in sequence.

391 Readings in Chinese Literature (3) Prereq: Mastery of intermediate-level of Chinese or consent of instructor. May be repeated. Maximum 9 hours.

451 Readings in Japanese Literature (3) Prereq: Mastery of intermediate-level Japanese or consent of instructor. May be repeated. Maximum 9 hours.

490 Internship (1-15) Career-related experiences in the United States or abroad with permission of the Language & World Business Director. For Language & World Business majors only. Satisfactory/No credit only.

ASIA STUDIES (145)

101-102 Asian Civilization (3,3) Comparative study of development of religion, social institutions, and high culture in India, China, Japan, and the Islamic world. 101-India and the Islamic World. 102-China and Japan. Writing-emphasis course.

121-122 Elementary Modern Standard Arabic I, II (5,5) Literary Arabic, language of the press, broadcast, literary, and formal situations. Meets every day, three days with instructor and two with native informant in addition to language lab. Must be taken in sequence.

141-142 Elementary Modern Hebrew I, II (4,4) Taped language program. Must be taken in sequence. Enrollment by permission of instructor.

161-162 Elementary Persian (4,4) Taped language program. Must be taken in sequence. Enrollment by permission of instructor.

221-222 Intermediate Modern Standard Arabic I, II (5,5) Literary Arabic, the language of the press, broadcasting, literature, and formal situations. Meets every day, three days with instructor and two with native informant in addition to language lab. Must be taken in sequence. Prereq: 121-122 or equivalent or consent of instructor.

241-242 Intermediate Modern Hebrew I, II (4,4) Taped language program. Prereq: 141-142 or equivalent or consent of instructor. Must be taken in sequence.

261-262 Intermediate Persian (4,4) Taped language program. Prereq: 161-162 or equivalent or consent of instructor. Must be taken in sequence.

319 Islamic Literature in English Translation (3) Selections from the Koran, classical Arabic and Persian poetry, and classical Arabic, Persian, and Turkish prose, including history, philosophy, mysticism, and belles-lettres.

321 Spoken Lebanese-Palestinian Arabic (4) Informal Arabic for use in daily life. Emphasis on appropriate response and understanding of cultural context. All work is oral, including exams, but grammatical analysis is based on standard (written) Arabic. Prereq: 121-122 or consent of instructor.

322 Advanced Modern Standard Arabic (4) Advanced grammar and readings in modern Arabic. Prereq: 221-222 or consent of instructor.

332 Classical Islam (3) (Same as Religious Studies 332).

333 Islam in the Modern World (3) (Same as Religious Studies 333).

471 Selected Topics in Asian Studies (3) Content varies. May be repeated. Maximum 9 hours.

491 Foreign Study (1-15)

492 Off-Campus Study (1-15)

493 Independent Study (1-15)

ASTRONOMY (150)

151-152 Introductory Astronomy (4,4) Survey of the composition, structure, and dynamics of the universe which includes the basic vocabulary of astronomy and scientific method. Components of the solar system including results from interplanetary exploration; hypotheses and theories of the origin and evolution of our solar system in light of current knowledge and scientific reasoning; stellar birth, evolution, and death as a chain of events; characteristics of galaxies and of the beginning of the universe in light of modern cosmology, relativity, and particle physics. A minimum of mathematical analysis. Must be taken in sequence. 4 hours lecture-demonstration and star chart field work. Only one of the three sequences 151-152, 161-162, or 217-218 may be taken for credit.

161-162 Introductory Astronomy with Laboratory (4,4) Survey course, with accompanying laboratory, treating the composition, structure and dynamics of the universe and introducing the basic vocabulary of astronomy and principles of scientific method. Components of the solar system including results from planetary exploration spacecraft; hypotheses and theories of the origin and evolution of the solar system in light of current knowledge and scientific reasoning; stellar birth, evolution, and death as a chain of events; characteristics of galaxies and of the beginning of the universe in light of modern cosmology, relativity, and particle physics. Principles for interpretation of astronomical observations are reinforced in laboratory. Must be taken in sequence. 4 hours lecture, 2 hours lab. Only one of the three sequences 151-152, 161-162 or 217-218 may be taken for credit.

217-218 Honors: Introductory Astronomy (4,4) Introduction to astronomy and astrophysics. Historical perspectives in understanding the celestial universe, with emphasis on the laws of physics as they apply to the
changing conceptions of the universe; structure of the solar system and celestial motions; evolution and properties of stars; galactic structure and models of the universe; observations, technique and interpretation of underlying physical laws in accompanying lab. 3 hours lecture, 2 hours lab. Coreq: Mathematics 141 or 150 or equivalent. Credit given for only one sequence of lower division astronomy. This sequence satisfies the Arts and Sciences requirement for a natural science with laboratory.

411 Astrophysics (3) Development of analytical physical models of the galactic structure of the universe, stellar and interstellar matter, and planetary systems. Topical and interdisciplinary approach includes consideration of quasars, pulsars, black holes and current developments in the field. Acceptable for credit in Physics. Prereq: Physics 226 and consent of instructor.

490 Special Topics in Astronomy (1-3) Topics of current interest in Astronomy and Astrophysics. May be repeated for credit with consent of department. Maximum 9 hours.

AUDIOLOGY AND SPEECH PATHOLOGY (160)

126 Speech for Foreign Students (3) Sounds and intonation patterns of American English and relation of spelling to sound. Develops improved students' ability to speak and understand English. Satisfactory/No credit.

304 Introduction to Communication Disorders (3) Nature, etiology, and incidence of speech, hearing, and language disorders.

305 Speech Science I: Phonetics and Acoustics of Speech (3) Basic phonetics including recognition and production of spoken English sounds with analysis of their formation; acoustic characteristics of speech and speech perception.

306 Speech Science II: Anatomy and Physiology (3) Anatomy, physiology, and embryological development of the speech production mechanism. Prereq: 305.

320 Speech and Language Development (3) Speech and language development in the normal child.

331 Articulation Disorders (3) Etiology, diagnosis, and treatment of articulatory defects. Prereq: 304, 305, or consent of instructor.


431 Stuttering (3) Nature, appraisal and treatment. Prereq: 304 or consent of instructor.

433 Observation of Clinical Practice (1) Prereq: 320, 331 or consent of instructor.

434 Clinical Practice in Speech-Language Pathology II (1-4) Prereq: 433 and consent of instructor. Enrollment limited; maximum of 4 hours per term must have prior departmental approval. May be repeated. Maximum 4 hours.


445 Clinical Practice in Audiology (1-4) Prereq: 473 and 494. May not receive credit for both courses. Maximum six hours.

455 Problems in Speech Pathology (1-3) Prereq: Consent of instructor.


465 Speech and Language of the Culturally Different Child (3) Speech and language differences of children of various minority groups, of different ethnic and class membership and from different geographic regions.

473 Audiology II (3) Basic principles of clinical audiology; pure tone, speech, masking and overview of special auditory tests. Prereq: 371.

491 Foreign Study (1-15)

492 Off-Campus Study (1-15)

493 Independent Study (1-15)

494 Aural Habilitation/Rehabilitation of the Hearing Impaired (3) Introduction to psychosocial aspects, amplification components, characteristics, assistive devices, speech acoustics, speech, perception, speechreading, phonetics, prosody, speech pathology of children, communication impairments/handicaps/remediation of adults, effects of aging/remediation on the elderly, and case studies. Prereq: 305 and 473, or equivalents or consent of instructor.

499 Senior Seminar in Communication Sciences and Disorders (3) Capstone Experience; A writing emphasis course exploring the forces shaping the profession of communication disorders in the past, present and future. Prereq: Consent of instructor and senior standing.

BIOCHEMISTRY (188)

310 Physiological Chemistry (4) Biochemical principles underlying physiological events in animals. Metabolism of carbohydrates, lipids, proteins, and nucleic acids. Role of vitamins. Enzymes as coenzyme and prosthetic groups. Action of drugs and hormones. Prereq: Chemistry 100-110 or 120-130, Biology 110-20 or Zoology 230. Not available for credit if it has been previously received for Biochemistry 410 or 420. F (Same as Nutrition 310). 410 Cellular and Comparative Biochemistry (4) Electrolyte behavior; chemistry and structure of proteins; enzymes, enzyme kinetics, catalysis; energy capture; synthetic metabolism; nucleic acid function, protein synthesis, and biochemical genetics; regulation of biochemical processes. Prereq: Chemistry 135-140, 160-169 and Biology 110-20. Three lectures and discussion. F, Sp

419 Cellular and Comparative Biochemistry Lab (2) Experiments with enzymes, nucleic acids, and membrane transport. Chemistry 135-140 and 160-169. Laboratory course under direction of a staff member.

420 Advanced Topics in Biochemistry (3) Selected Topics of current research interest, e.g., allosteric control and feedback inhibition in metabolism; mechanisms of gene expression, bioenergetics, etc. Emphasis on original literature and the experimental basis of current knowledge. Cognate work required, research, seminar, and laboratory sections. Prereq: Prereq: Consent of instructor.

452 Independent Research in Biochemistry (1-6) Special experimental problems under direction of a staff member. Limited to undergraduates and by consent of instructor. May be repeated. Maximum 12 hours. Prereq: Prereq: Consent of instructor.

462 Junior/Senior Seminar (1) Lecture/discussion on the application of basic knowledge and techniques in the research, clinical, diagnostic or therapeutic environments. May not be used toward requirements for major. May be repeated. Prereq: Prereq: Consent of instructor.

471-481 Introduction to Physical Biochemistry (3.3) Physicochemical principles with applications to biological systems. Must be taken in sequence. 471 Thermodynamics; chemical equilibrium; solution chemistry; transport; electrochemistry; kinetics including enzymatic catalysis. 481-Elementary quantum chemistry; interactions of light with biological molecules; optical and magnetic spectroscopy; light scattering; case studies of selected macromolecules. Prereq: Mathematics 142, Chemistry 360-369 and Biology 120 or consent of instructor. 471-473, 481-483. (Same as Chemistry 471-481.)

BIOLOGY (190)

110-120 General Biology (4,4) Biology 110 - Biology of cells; chemical basis of life; cell structure and function; energy metabolism; cell division; Mendelian and molecular genetics; kingdoms of monera, protista, and fungi. Biology 120 - Plant and animal anatomy (tissues, organs, and organ systems), physiology, growth, and reproduction; ecology, population genetics, behavior, and evolution. Recommended, but not required to be taken in sequence. Students who receive credit for 110-120 may not also receive credit for Botany 110-120 or Honors Zoology 117-118.

210 Cell Biology (4) Organization and function of the cell. Prereq: 110-120 or 150, or Botany 110-120 or Honors Zoology 117-118 or the equivalent of 2 years of high school biology and satisfactory ACT scores. Chemistry 110-120, 3 hours and 1 additional class meeting. May be taken in any sequence or combination with 220 and 230.

220 General Genetics (4) Classical and modern principles of heredity. Prereq: 110-120, or Botany 110-120, or Honors Zoology 117-118 or the equivalent of 2 years of high school biology and satisfactory ACT scores; Chemistry 110-120, 3 hours lecture, 1 hour discussion each week. May be taken in any sequence or combination with 210 and 230.

230 General Ecology (4) Relations between organisms and their environment, including human environmental problems. Prereq: 110-120, or Honors Zoology 117-118 or the equivalent of 2 years of high school biology and satisfactory ACT scores; Chemistry 110-120, 3 hours lecture, 1 hour discussion each week. May be taken in any sequence or combination with 210 and 220.

BOTANY (198)

110-120 General Botany (4,4) 110 - Introduction to taxonomy through identification; basic organization and function of cells; respiration; photosynthesis; genetics (including meiosis, mitosis, Mendelian inheritance); survey of plant kingdom (bacteria, algae, fungi), mosses, ferns, conifers, and flowering plants; 120-130, 3 hours lecture, 1 hour discussion each week. May be repeated. Maximum 6 hours.

305 Socio-Economic Impact of Plants (3) Significance of plants in origin and development of human culture and evolution of cultivated plants, and role of plants in present civilization. Occasional field trips. Sp, Su, Mini-Term

306 Genetics and Society (3) Introduction to genetics, anthropology and evolution with emphasis on their implications for inter-group and inter-racial contacts. Prereq: Prereq: Consent of instructor.

309 Biology of Human Affairs (3) Basic biological principles involved in deterioration and preservation of an environment in which humans and their cultures may survive.

310-320 Plants: An Evolutionary Survey I, II, III (3,3) Morphology, development, natural history, and evolution. 310 - Surveys non-vascular plants (monera, algae, fungi, and bryophytes). 320 - Surveys vascular plants (ferns, fern allies, gymnosperms, and flowering plants). Need not be taken in sequence. Prereq: 8 hours biological sciences. F, Sp

313 Introductory Plant Pathology (3) (Same as Entomology and Plant Pathology 313.)

321 Introductory Plant Physiology (4) Organismal physiology of plants: water relations, mineral nutrition, photosynthesis, reproduction, and development of vascular and non-vascular plants. Effects of age, light, natural rhythms, temperature, and other environmental factors. Lecture and lab. Prereq: Prereq: Consent of instructor. 1 year general chemistry and one year biological science.

346 Introduction to Oceanography (4) Physical, chemical, and biological processes of the oceans, including tides, waves, ocean circulation, ocean basin processes, marine sedimentation, biogeochemical cycles, and food webs.

371 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.

400 Tutorial in Botany (1-3) Individual, independent study under guidance of selected staff. By application only. May be repeated with consent of department. Maximum 4 hours.

401-402 Field Studies in Botany: (Specific Topic to be Enrolled) (1-3) Field experience and taxonomy of special plant groups. Selected field topics will vary and may include: Bryology, Lichenology, Fungiology, Aquatic Flora, Bryophytes, and Botani-
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Description</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>430</td>
<td>Radio-Television Production (3)</td>
<td>Basic principles of production including location, emphasis on the concepts relating to message design, development, and production in the field. Includes concept development, script writing, shooting, graphics, sound design, lighting, and editing.</td>
<td></td>
</tr>
<tr>
<td>450</td>
<td>Radio, Television and Society (3)</td>
<td>Effects of electronic media on society. Research and theory applied to current issues.</td>
<td>Prereq: Communications 100</td>
</tr>
<tr>
<td>460</td>
<td>Broadcast News Operations (3)</td>
<td>Production of news programs for broadcast on television stations. Electronic news gathering, editing and writing news packages, and studio production.</td>
<td>Prereq: 410 or consent of instructor</td>
</tr>
<tr>
<td>310</td>
<td>Radio-TV News (3)</td>
<td>Writing and reporting for electronic media. Lecture and lab course with writing emphasis.</td>
<td>Prereq: 275 and Communications 200</td>
</tr>
<tr>
<td>320</td>
<td>Audio/Video Production (3)</td>
<td>Emphasis on the function and interactive use of video and audio tools to develop effective production. Lecture and laboratory provide experience in production processes, including concept development, script writing, set design, sound design, and production.</td>
<td></td>
</tr>
<tr>
<td>329</td>
<td>Advanced Analytical Chemistry Laboratory (2)</td>
<td>Experiments on topics covered in 320.</td>
<td>Prereq: 310</td>
</tr>
<tr>
<td>330</td>
<td>Video Production (3)</td>
<td>Video production and video editing skills for announcers, interviewers, narrators and newscasters.</td>
<td>Prereq: 275 and Communications 200</td>
</tr>
<tr>
<td>340</td>
<td>Analytical Chemistry Laboratory (1)</td>
<td>Experiments on topics covered in 310.</td>
<td>Prereq: 310</td>
</tr>
<tr>
<td>350-360</td>
<td>Organic Chemistry (3,3)</td>
<td>Compounds of carbon and their reactions. Application of chemical analysis. Electrochemistry; equilibrium; chromatography; spectrophotometry; exercise in chromatography, ion exchange, and solvent extraction.</td>
<td></td>
</tr>
</tbody>
</table>

**CHEMISTRY (235)**

100 Principles of Chemistry (4) Bonding and molecular structure, gases, liquid and solid state, solutions, colloids, acids and bases, oxidation and reduction, kinetics and equilibria. 3 hours and 1 lab.  
110 Introduction to Organic and Biochemistry (4) Organic chemistry: alkenes, unsaturated and aromatic hydrocarbons, structures and reactions of various organics, organic functional groups. Biochemistry: amino acids and proteins, carbohydrates, lipids, nucleic acids. 3 hours and 1 lab. Prereq: 100 or 130 or 131 or 138. 
120-130 General Chemistry (4,4) A general course in theoretical and descriptive chemistry. 120: Modern physical chemistry, chemical bonding, stoichiometry, quantitative treatment of gas laws, quantitative aspects of solution chemistry, kinetics, 130: Chemical equilibria, thermodynamics, descriptive chemistry of non-metallic and metallic elements, electrochemistry, introduction to organic and biochemistry. Prereq for 120: 120 or 121. 3 hours and 1 lab. 
121-131 General Chemistry (4,4) For chemistry majors. Subject matter similar to Chemistry 120-130. Prereq for 121: 120 or 121 or 128. 3 hours and 1 lab. Prereq: 121 or 131-F, 131-F. 
125-138 Honors: General Chemistry (4,4) 3 hours and 1 lab. 125-F, 138-F. 
140 Chemical Programming (2) Use of the computer in solving problems encountered in organic chemistry. Required of and limited to chemistry majors. Prereq or Coreq: 120 or 131 or 138. 1 hour and 1 lab. 
200 Introduction to Chemical Research (1) Participation in an active research program in analytical, inorganic, physical, biochemistry. Students work with researchers to acquire expertise in planning experiments, interpreting results, and formulating hypotheses. Credit may be applied toward a major or minor in chemistry. Not to be used for science credits for 400. Prereq or Coreq: 200 or higher level course in chemistry and consent of instructor. May be repeated. Maximum 4 hours. 
230 Inorganic Chemistry (3) Periodicity, valence, bonding, and the descriptive chemistry of the elements; coordination compounds; nuclear chemistry; transition elements; acid-base properties. 3 hours and 1 lab. Prereq: 120 or 131. 
310 Analytical Chemistry (3) Principles and practices of quantitative measurements in chemical systems. Acid-base, complexometric, and redox equilibria; applications of instrumental analysis; polarimetry; elementary spectrophotometry; chemical separations including chromatography, ion exchange, and solvent extraction. Prereq: 130 or 131 or 138. 
319 Analytical Chemistry Laboratory (1) Experiments on topics covered in 310. Coreq: 310. 
320 Advanced Analytical Chemistry (3) Modern electrochemical methods; mass spectrometry; optical spectroscopic techniques; magnetic resonance methods; advanced chromatographic theory. Prereq: 310. 
350-360 Organic Chemistry (3,3) Compounds of carbon and their reactions. Reaction mechanisms, synthesis, spectroscopic, and other physical properties. May be taken in sequence. Prereq in Chemistry 365 or 368. Coreq for 360: 359. 

**BUSINESS LAW (216)**

301 The Legal Environment of Business (3) Introduction to legal system including legal ethics (jurisprudence), sources of law, steps in lawsuits, constitutional law related to business, administrative regulation, securities law, antitrust law, employer-employee relations, product liability, consumer protection, business association, environmental law, product liability, contracts, and white collar crimes and torts. Prereq: Junior standing. 
400 Research in Chemistry (3) Open to senior majors with consent of department head. Written reports are required. Advanced students work with faculty on projects requiring extensive thinking about advanced topics acquired in chemistry. May be repeated. Maximum 6 hours.

405 Topics in the Development of Chemistry (3) Historical development of topics such as the atomic theory; chemical industry; interrelationship of population, energy, and food. Subject matter may vary from one section to another. Assignments include readings from older literature (Dayton, Faraday, Kekulé) and from current periodicals. Includes the use and misuse of evidence, the impact of chemistry on society, how scientists reach conclusions, and the nature of scientific controversy. Written reports will be required. Coreq: Senior standing in chemistry. F. Writing emphasis course.

406 Senior Seminar (1) Discussions by faculty and students of current research and topics from recent literature. Oral and written reports required. All chemistry majors are encouraged to enroll. Coreq: Senior standing in chemistry. May be repeated. Maximum 2 hours.

409 Advanced Chemical Experimentation (3) Laboratory course in application of modern experimental techniques to solution of chemical problems. Synthesis and characterization of organic and inorganic compounds, with emphasis on independent study and use of chemical library. Prereq: 230, 320, and 360. 3 labs. F, S.

430 Advanced Inorganic Chemistry (3) Atomic and molecular structure, bonding theories, descriptive chemistry of the elements, kinetics and mechanism of inorganic reactions, applications of modern techniques for characterization, coordination and organometallic chemistry. Prereq: 360 and 463. Sp.

431 Radioactivity and Its Application (2) Radioactive materials in tracer and therapeutic applications. Radioactive decay, detection apparatus and techniques, tracer procedures, safety precautions in agriculture, biology, medicine, nutrition, etc. Not for credit by chemistry or physics majors or minors. Prereq: Mathematics 123 or equivalent and two of the following: 101, 110, 120-130, 121-131, 130-131, 228, Sp.

450 Advanced Organic Chemistry (3) Modern organic reactions of mechanistic, synthetic, and theoretical interest. Content reflects current trends in the area. Prereq: 360. F.

471-481 Biophysical Chemistry (3,3) (Same as Biochemistry 471-481.)

473-483 Physical Chemistry (3,3) Students may not receive credit for both 473 and 477 or for both 481 and 483. 473 - Properties of gases; first, second, and third laws of thermodynamics; chemical equilibria; simple phase equilibria; properties of solutions; introduction to statistical thermodynamics. 483 - Kinetics of chemical reactions; introduction to quantum mechanics and applications to electronic structure of atoms and molecules; molecular spectroscopy. Prereq: 130 or 131, 138, Physics 233 or 222, and Mathematics 241 or 247. F, Sp.

479-489 Physical Chemistry Laboratory (2,2) Experiments on topics discussed in 471-487. Prereq: or Coreq: Corresponding courses 471 or 473 for 479 and 481 or 483 for 487. 1 lab. F, S.

484 Advanced Physical Chemistry (3) Topics from chemical dynamics, statistical thermodynamics, quantum mechanics of atomic and molecular systems, crystal structure and solid state. Prereq: 461 or 483. F.


493 Child and Family Studies (245)

110 Introduction to Early Childhood Education (3) History, philosophy, current issues, programs, and trends in early childhood education. Prereq: Consent of instructor. Coreq: or Prereq: Completion of Family Studies core, completion of the introductory Psychology core, or consent of instructor. Satisfaction/No Credit only.

205 Introduction to Family Life Programs (3) Community and school-based programs that focus on enhancing individual and family life. Includes observation experience. Satisfaction/No credit grading only.

210 Human Development (3) Conception through adulthood in various social ecological contexts. Interrelation-
461 Research in Child and Family Studies (3-6)
Supervised research experience. Prereq: 9 hours in Child and Family Studies, cumulative GPA of 3.0 or above, Junior standing, or consent of instructor. May be repeated. Maximum 12 hours.

485 Special Topics in Child and Family Studies (1-15)
Personnel or professional interest in development or family studies. Prereq: 9 hours in Child and Family Studies, Junior or Senior standing, or consent of instructor. May be repeated. Maximum 9 hours.

497 Honors: Child and Family Studies (3-6) Issues or topics affecting children and/or families, designed to meet particular interests of the student. Prereq: 15 hours in Child and Family Studies, overall GPA of 3.25 or greater, Junior or Senior standing, consent of instructor. Maybe repeated. Maximum of 6 hours.

**CINEMA STUDIES**

292 Film Design (3) (Same as Art 292)

281 Introduction to Film Studies (3) (Same as English 281)

312 Popular Culture and American Politics (3) (Same as Political Science 312)

233 German Film (3) (Same as German 323)

334 Film and American Culture (3) (Same as English 334 and American Studies 334)

292 Advanced Film Design (3-6) (Same as Art 292)

240 French Cinema (3) (Same as French 420)

421 Topics in Italian Literature and Cinema (3) (Same as Italian 421)

469 Sexuality and Cinema (3) Same as Women's Studies 469.

49 Special Topics in Film (3) (Same as English 499)

491 Foreign Study (1-15)

492 Off-Campus Study (1-15)

493 Independent Study (1-15)

**CLASSICS (257)**

221 Early Greek Mythology (3) Archaic Greek religion through comprehensive study of Greek myths with emphasis on how they reflect the early Greek vision of the universe and human society. Origins and development of Greek myths and the rise of organized religion from Bronze Age to about 450 B.C. Readings include Hesiod and Aesop's fables. Writing-emphasis course.

222 Classical Greek and Roman Mythology (3) Use of myth in literature, history, religion and philosophy of Greece and Rome from about 450 B.C. to about 350 A.D. Two topics are the latter half of the fifth century B.C. and the last quarter of the fourth century B.C. Includes Oriental influences into Greece and Rome, including early Christianity. Readings include Sophocles, Euripides, Roman poetry and the modern scholarship. Writing-emphasis course.

232 Archaeology and Art of Ancient Greece (3) Survey of Greek archaeology from prehistoric times to the Roman period (ca. 3000-100 B.C.). For prehistoric times emphasis on architecture and artifacts used to recreate the culture of the following periods. B.C. Includes Oriental influences into Greece and Rome. May be repeated with permission of instructor. Writing-emphasis course.

233 Archaeology and Art of Etruria and Rome (3) Survey of the archaeology of the Italian peninsula and the Roman World from prehistoric times to the fall of the Roman Empire (1000 B.C.-500 A.D.). Reconstructions of the Etruscan culture from tombs, paintings, and artifacts, development of Roman architecture, and urban planning of Rome and the Roman world. Prereq: 200 or consent of instructor. Writing-emphasis course.

253-254 Greek and Roman Literature in English Translation (3,3) 253-Greek Literature. Major literature of ancient Greece from Homer to Menander, with emphasis on the two and a half centuries B.C. 254-Roman Literature. Major literary works of the Romans from Plautus to Tacitus. How the Romans borrowed from the Greeks and then achieved their own artistic identity by the time of Vergil’s Aeneid. Writing-emphasis course.

273 Medical and Scientific Terminology (3) Greek and Latin roots from which medical and scientific terminology is derived. Extensive practice in analysis of terms. Practice in use of Latin nomenclature.

331 Archaeology of the Aegean Bronze Age and Early Greece (3) Includes Troy, the Cycladic islands, the Greek mainland, Crete, and Cyprus ca. 3000-700 B.C. Studies fall of the Mycenaean civilization and their effect on the Aegean World and Minoan Crete. Evidence for daily life, religion, trade, and foreign contacts. Architecture, wall paintings, and artifacts. Prereq: One of the following: 222, 381, or ancient history (Ancient Near East or Ancient Greece), or consent of instructor. Writing-emphasis course.

334 Cities and Sanctuaries of the Ancient Greek World (3) Archaeological survey of the development of the Greek city and sanctuary from prehistoric times through the Roman period (ca. 2000 B.C. - 200 A.D.). Includes topography and plans of major cities and sanctuaries, functions of buildings, development of city planning, quality of city life, religious rites and festivals including the Olympic games. Ancient sites include Mycenae, Athens, Priene, Alexandria, Pergamon, Olympia, Delphi. Students are recommended to have taken one of the following: 221, 232, 233, 281, History 310. Writing-emphasis course.

381 Greek Civilization (3) Major aspects of ancient Greek civilization: religion, fine arts, philosophy, politics, science, and literature. Prereq: Consent of instructor. Writing-emphasis course.

382 Roman Civilization (3) Major aspects of ancient Roman civilization: political institutions, art and architecture, history, culture and daily life, emphasizing the Latin language. Prereq: Consent of instructor. Writing-emphasis course.

383 Women in the Greek and Roman World (3) The condition of women in the apparently male-dominated world of Classical Greece and Classical Rome. Evidence from literature, vase paintings, and other arts in examined from the age of Homer to the second century A.D. with emphasis on Athens in the fifth century B.C. and Roman Italy in the first and second centuries A.D. (Same as Women's Studies 383)

401 Greek Poetry (3) Epic, lyric, drama. Authors vary. May be repeated for credit. Maximum 9 hours. Prereq: 261.

402 Greek Prose (3) History, philosophy, and oratory. Authors vary. May be repeated for credit. Maximum 9 hours. Prereq: 261.

422 Seminar in Classical Studies (3) Field of Classical studies today: recent achievements in the areas of both philology and archaeology; impact of the decipherment of Linear B; new understandings of the culture and politics of the "golden age" of Pericles and Augustus; Classical studies and the academic profession on both the high school and college levels. May be repeated. Maximum 6 hours. Writing-emphasis course.

441 Special Topics in Classical Civilization (1-3) Topics in art, literature, religion, and society of Greece and Rome. May be repeated up to three times with consent of department.

461 Studies in Classical Archaeology (3) Variable course covering subject matter not taught in an existing course, or concentrating on a specific aspect of the existing survey. May be repeated. Maximum 9 hours. Prerequisites according to topic.

462 Roman Law (3) Development of Roman law through examination of cases from the writing of the Roman jurists, the world's first legal profession. Emphasis on understanding legal institutions in relationship to Roman society. Cases cover aspects of Roman property and commercial law.

491 Foreign Study (1-15)

492 Off-Campus Study (1-15)

493 Independent Study (1-15)

**COLLEGE SCHOLARS HONORS**

317-318 College Scholars Seminar (1,1) Sequence in ancient literature and/or theory. Prereq: Consent of instructor. May be repeated. Maximum 8 hours. Satisfactory/No Credit grading only.

491 College Honors: Foreign Study (1-15) See Director of Special Programs. Primarily for College Scholars.

492 College Honors: Off-Campus Study (1-15) See Director of Special Programs. Primarily for College Scholars.

493 College Honors: Independent Study (1-15) See Director of Special Programs. Primarily for College Scholars.

**COMMENTS (259)**

109 Introduction to Mass Communications (3) Overview of media and mass communications with emphasis on American media. Prereq: Consent of instructor. Writing-emphasis course.

202 Writing for Mass Communications (3) Information gathering and writing under deadline for print and broadcast media, including news and promotional copy. Preparation of news, advertising and press releases. Grammar, usage, and style examinations. Prerequisites: 100, English 102, and typing proficiency.

300 Mass Communications Research Methods (3) Social science research methods, especially sample surveys, used by communications media. Applications to both internal decision-making and to external communications in media. Prereq: 200 or consent of instructor. F, Sp

400 Mass Communications Law and Ethics (3) Emphasis on legal issues directly affecting the media: labor, privacy, free press, fair trial, judicial controls, government regulations. Also includes ethical standards and practices of the mass media in America. Prereq: 200 or consent of instructor. F, Sp

**COMPARATIVE LITERATURE (260)**

201 Introduction to Comparative Literature (3) Basic knowledge, techniques, and sources necessary to compare literatures of various cultures, ages, and nations.

202-203 Cross-Cultural Perspectives in World Literature (3,3) Literary perspectives and values in different time periods and cultures. Variable content. Writing-emphasis course.

401-402 Special Topics in Comparative Literature (3,3) Variable content. May be repeated. Maximum 9 hours.

491 Foreign Study (1-15)

492 Off-Campus Study (1-15)

493 Independent Study (1-15)

**COMPUTER SCIENCE (266)**


111 Computer Organization (3) Number systems, internal representation of numbers in computers, hardware components, hardware organization, interaction to assembly language, microprogramming control units. Computing with register machines, introduction to digital circuits. Prereq: 102. 3 hour lab required.

112 Data Structures (3) Structured programming, data structures and applications, I/O, techniques, lists, queues, trees, files, algorithms, data bases. Prereq: 102 or consent of instructor. 3 hour lab required.


291 Lower-Division Special Topics (1-3) Topics vary. Programming languages, their ownership, legal and social implications. Software packages may be repeated. Maximum 9 hours.
COUNSELOR EDUCATION AND COUNSELING PSYCHOLOGY (267)

212 Career and Personal Development (3) Systematic approaches to facilitating career development and life planning. F, Sp

215 Learning Skills and Study Systems (3) Approaches to enhancing academic performance through study skills, efficient reading and understanding of personal factors.

305 Laboratory in Educational and Counseling Psychology (1-3) Practice in acquiring knowledge and skill in areas such as interpersonal relations, career decision-making and self-awareness. Individual and small-group format. May be repeated. Maximum 9 semester hours. Satisfactory/No Credit or letter grade.

493 Directed Independent Studies (1-3) Independent study in a specialized area with physical education. May be repeated. Maximum 9 or 440 or 455 or approval of instructor. E

DANCE (274)

101 Practicum: Dance Production (1) Supervised technical and promotional production aspects of university dance company. May be repeated. Maximum 2 hours.

201 Practicum: Dance Performance (1-2) Preparation and presentation of university dance company performances. Participation through audition only. May be repeated. Maximum 16 hours.

210 Ballet: Level II (1) Instruction and practice in elementary classical ballet techniques. May be repeated. Maximum 4 hours.

220 Jazz: Level II (1) Instruction and practice in elementary jazz dance styles and techniques. May be repeated. Maximum 4 hours.

330 Modern: Level II (1) Instruction and practice in elementary modern dance techniques. May be repeated. Maximum 4 hours.

400 Special Topics (1-3) Selected disciplinary or professional areas of dance. May be repeated. Maximum 12 hours.

410 Ballet: Level III (2) Instruction and practice in advanced jazz and musical theater dance styles and techniques. Available to dance majors and minors or with consent of instructor. May be repeated. Maximum 16 hours.

440 Composition I (2) Choreographic skills emphasizing form, content and music. Prereq: 4 hours credit in upper level modern dance technique (330 or 430) or approval of instructor.

450 Composition II (2) Choreographic skills emphasizing design, use of costumes and props. Prereq: 440 or approval of instructor.

450 Composition III (3) Application of choreographic and production skills culminating in the presentation of two works. Prereq: 440 or 455 or approval of instructor.

465 Dance Notation (3) Fundamentals of movement notation with emphasis on notation and reading of elementary movement studies. Senior standing or graduate status required for graduate credit. Different levels of performance are expected of those registered for graduate credit.
ECONOMICS (283)

180 Survey of Economic Ideas (3) Ideas of major economists in context of socioeconomic conditions of their times. Emphasis on nontechnical treatment. May not be substituted for Economics 201.

201 Introductory Economics: A Survey course (3) Theory of consumer behavior, theory of firms, supply and demand, costs of production, market models, national income and employment theory, money and banking, monetary and fiscal policy, debt, and international economics.

207 Honors: Introductory Economics (4) Honors course for students of superior ability and interest. Students accepted on the basis of their records.

311 Intermediate Microeconomics (3) Theories of consumer behavior, production and costs, price and behavior of perfect and imperfectly competitive, monopolistic and perfectly competitive markets, input prices, income distribution, welfare and general equilibrium.

313 Intermediate Macroeconomics (3) Measurement of income and prices, aggregate demand, output, employment, price determination, inflation, business fluctuations, fiscal and monetary policy and growth.

321 International Economics (3) Balance of payments, exchange rate determination, monetary and fiscal policies, monetary arrangements, comparative advantage, tariffs and non tariffs, trade distortions, protection arguments, regional and international trade.

323 Economic Development (Third World) (3) Theories of economic development, policies and strategies used to promote economic improvement in less developed countries.

324 Comparative Economic Systems (3) Economic processes under different economic systems, social and political mechanisms.

325 Economic History of the North Atlantic Community (3) Origins of capitalism, mercantilism, industrial revolution, development of factory system, rise of organized business and labor, integration of the economic system.

331 Government and Business (3) Antitrust and regulatory economics, problems in regulation and social control in business organization, oligopoly theory.

341 Survey of Labor Economics (3) Extension of economic principles to labor markets, public policy questions, demand and supply, theory of wage differentials, unemployment, unions, investment, individuals, education and training, mobility.

343 Labor Relations and Collective Bargaining (3) Theory and operation of labor-management relations.

351 Monetary Economics (3) Role of money in the economy, Federal Reserve System, evaluation of monetary policy.

361 Regional and Urban Economics (3) Overview of regional differences. Theory of industrial and agricultural locations, urbanization, economic basis for land use patterns, central places, and urban form, regional and urban structure, growth, and methods of analysis, examination of urban problems.

381 Econometrics (3) Methods of specification, estimation, testing and forecasting of economic relationships. Includes specifications of models, estimation methods, statistical inferences of empirical results, forecasting procedures and computer econometric problems, such as multi-collinearity, heteroscedasticity, and autocorrelation.

400 Special Topics (3) Topics vary. Prerequisites determined by department each time course is offered. May be repeated when topic varies. Maximum 9 hours.

413 Macroeconomic Fluctuations (3) Analysis of historical data, methods of analyzing macroeconomic fluctuations, theoretical explanations of cycles, and the role of monetary and fiscal policies in the aggregate economy.

415 History of Economics (3) Methods of study of doctrinal history. Origins and evolution of major doctrines, classical and neoclassical, economic theories of Keynes and his followers, some principal developments of the twentieth century. Major writing requirements.

438 Political Economy of World Development (3) Topics vary. Latin America, the Soviet Union and Eastern Europe, analysis of major economic strategies, policies, and problems. Major writing requirement.

440 Political Economy of the United States (3) Topics vary. Policies promoting growth, development, and influence of government in society.

450 Public Finance: Taxation and Intergovernmental Relations (3) Theories of taxation, government finance, and fiscal policy in the United States and international context.

475 Topics in Economic History (3) Historical and empirical analysis of economic growth and development, and the role of government in economic decisions.

480 Dance History through the 19th Century (3) History of dance, development of dance as an art form, and the role of dance in society.

485 Dance History through the 20th Century (3) History of dance, development of dance as an art form, and the role of dance in society.

486 Dance History through the 21st Century (3) History of dance, development of dance as an art form, and the role of dance in society.

488 Dance History through the 22nd Century (3) History of dance, development of dance as an art form, and the role of dance in society.

489 Dance History through the 23rd Century (3) History of dance, development of dance as an art form, and the role of dance in society.

490 Dance History through the 24th Century (3) History of dance, development of dance as an art form, and the role of dance in society.

491 Dance History through the 25th Century (3) History of dance, development of dance as an art form, and the role of dance in society.

492 Dance History through the 26th Century (3) History of dance, development of dance as an art form, and the role of dance in society.

493 Dance History through the 27th Century (3) History of dance, development of dance as an art form, and the role of dance in society.

494 Dance History through the 28th Century (3) History of dance, development of dance as an art form, and the role of dance in society.

495 Dance History through the 29th Century (3) History of dance, development of dance as an art form, and the role of dance in society.

496 Dance History through the 30th Century (3) History of dance, development of dance as an art form, and the role of dance in society.

498 Dance History through the 31st Century (3) History of dance, development of dance as an art form, and the role of dance in society.

499 Dance History through the 32nd Century (3) History of dance, development of dance as an art form, and the role of dance in society.
systematic planning process; analysis of existing travel patterns, modeling and demand, development of alternatives and the evaluation of civil engineering projects. Civil engineering decision making and applications of economic analysis. Prereq: Sophomore standing.

261 Structural Analysis I (3) Reactions; shear and moment diagrams; forces in structures; axial load and bending moments; area moments of inertia; torsion. Prereq: Basic Eng. 121.

305 Seminar (2) Selected topics including historical and modern civil engineering achievements, professional and ethical responsibilities. Prereq: Junior standing


330 Introduction to Soil Behavior (4) Physical and mechanical properties of soils, theory of compaction, seepage, and effective stress. Consolidation theory, time rate and settlement, shear strength of sands and clays, and analysis of non-homogeneous slopes. 3 hours, 1 lab. Prereq: or Coreq.: 361.

352 Transportation Engineering II (3) Introduction to design, construction, maintenance, and operation of various types of highways, roads, and bridges, with emphasis on design, analysis, and construction of highway facilities: covers both geometric and pavement design. Prereq: 251, 351.

352 Traffic Engineering (3) Characteristics of urban and rural traffic, and the interaction between the two; traffic studies; basic considerations of traffic circulation and control lighting. Prereq: 201, 251, 352.

430 Airport/Railroad Planning and Design (3) Airport planning and design; railroad engineering; review of airfield configuration, airfield capacity, geometrics and terminal layout and design; Railroad capacity, geometrics and system layout and design. Prereq: 201, 351, 352.

461 Analysis of Framed Structures (3) Stress and strain due to moving loads; use of influence lines; lateral forces due to earthquake and wind forces; analysis of portals, buildings frames, and space frames; matrix methods; use of computer in structural analysis. Prereq: 361.


474 Reinforced Concrete Design (3) Reinforced concrete beams and floor slabs, columns with combined stresses; design of typical framed building including connections. Prereq: 471.

480 Water and Waste Transport (3) Theory and design of water distribution systems, and wastewater collection systems. Prereq: 360.

485 Principles of Geohydrology (3) Same as Geology 485.

490 Water Resources Project Design (3) Development of multiple-purpose reservoir and dam project, including data acquisition, spill-way and outlet works design; earth and gravity dam stability analyses; analysis of Existing and operation principles; and dam safety concepts, including dam break analyses. Prereq: 390, 395.

492 Urban Drainage Engineering (3) Design and management of stormwater conveyance and control structures, including: storage and conveyance, storage and conveyance, and gravity dams; design of drainage systems for urban, strip mining, and highway development; design of Inlet structures, storage ponds, and detention systems; application of commonly-used computer runoff models, evaluation of land-use changes of stormwater flow quantity and quality. Prereq: 390, 395.

495 Water Resources Development and Management (3) Institutional framework including: water law, evaluation procedures for comparing and selecting among water resources development alternatives, multi-objective evaluation, resource allocation, environmental economics, benefit-cost analysis, and cost allocation methods; environmental impact assessment procedures; decision making based methods; case studies. Prereq: Senior standing.

ENGGINEERING ELECTRICAL AND COMPUTER (320)

201 Circuits I (3) Fundamental laws of circuit analysis. Ohm’s Law, Kirchoff’s current and voltage laws, the law of conservation of energy, circuits containing independent sources, nodal and mesh analysis, circuits, series, parallel, and Norton’s and Thevenin’s Theorems. Steady state analysis of DC and AC circuits. Complete solution for transient analysis for circuits with one and two storage elements. Prereq: All course work in the Freshman Engineering curriculum. Coreq.: Phys 231 and Mathematics 231.


250 Electrical and Computer Engineering Computa- tions (3) Complex analysis and phasor calculus; linear algebra, iterative algorithms for circuit simulation; and signal processing in digital systems; introduction to computer languages. Programming in C and the use of the application language MATLAB. Prereq: or Coreq.: 201.

251 Small Computer Systems (3) Structured assembly language programming; data collection under the control of the personal computer using A/D converters; D/A converter output to CRT displays; on-line, real-time analysis using elementary programs. Prereq: Basic Eng. 121.

301 Circuits and Electron Devices (3) Circuits, Transistors, Transistors, Transistors. For non-majors only. Prereq: Mathematics 231, Physics 231.


312 Linear System Analysis (3) Steady-state and transient analysis of continuous and discrete time systems, stability, block diagrams and signal flow graphs, introduction to feedback theory. Includes laboratory experiments and projects. Design content: 1 hour. Prereq: 311.


332 Electrical Circuits (3) Multistage transistor amplifiers, biasing, gain stages, and output stages; frequency and transient response of open loop linear amplifiers; fundamentals of integrated circuits, operational amplifier applications in basic feedback configurations; basic transistor switching circuits. Includes laboratory experiments and design projects. Design content: 2 hours. Prereq: 202.


342 Communication Systems I (3) Systems analysis of communication systems. Topics include signal and system classification, Fourier and Hilbert Transform techniques, power spectral density and correlation, and sampling theory. Analog modulation techniques including linear, angle, and pulse modulation with applications to detection of random variables and stochastic processes. Includes laboratory experiments and projects. Prereq: 311.

351 Introduction to Logic Design of Digital Systems (3) Boolean algebra and logic design of combinational

431 Digital and Analog Integrated Electronics (4) Principles and characteristics of power semiconductor devices, single-phase and polyphase power control circuits, converters and regulators, ac-dc converter circuits, industry applications, includes laboratory experiments and design projects. Design content: 1 hour. Prereq: 312.

432 Power Electronics (4) Principles and characteristics of power semiconductor devices, single-phase and polyphase phase-controlled converters, converter control, ac phase controller, voltage-fed inverter and dc-dc converters, examples, industry applications, includes laboratory experiments and projects. Design content: 1 hour. Prereq: 321.

433 Electronic Amplifiers (4) Feedback amplifier principles; wideband linear amplifier design; radio and audio power amplifier design; linear regulated power supply design; image filters and noise factors; oscillation principles. Includes laboratory experiments and design projects. Design content: 2 hours. Prereq: 332.

441 Communication Systems II (3) Probability, random variables, and random processes as applied to communication systems. Analysis of linear systems in the presence of noise. Digital communication concepts including modulation, signaling, demodulation, receiver design, error detection and correction, and equalization. Analytical and computer simulation techniques in the presence of noise and matched filtering. Design content: 1 hour. Prereq: 341.


443 Microwave Circuits and Electronics (3) Scattered wave description of circuits to include isolators and amplifiers, couplers and power dividers, circulators, phase shifters. Loading and interconnection of systems. Power generation and amplification by vacuum and solid state devices. Microwave switching, filtering and multiplexing devices. Transmission line and waveguide components. Includes laboratory experiments and design projects. Design content: 2 hours. Prereq: 321, 341, 342.

451 Microprocessors in Computer Engineering (4) Project oriented using a microcomputer kit having a monitor program and development system with cross-assemblers, file management, and simulation capability. Interfacing and hardwaresoftware trade-offs in interrupt driven applications. Grade is dependent upon number of projects completed, homework solutions, and engineering notebook. Includes laboratory experiments and design projects. Design content: 3 hours. Prereq: 351.

452 Organization and Design of Digital Systems and Computers (4) Considerations for hardware organization of computer and digital systems. Includes ALU and CPU structures, control unit organization, storage systems, and the I/O channels. Introduction to computer design and system structure. Design content: 3 hours. Prereq: 351.

453 Data Acquisition Systems (4) Digit-to-analog conversion techniques; digital-to-analog conversion techniques; analog error analysis of D/A converters, sampling hold circuits, analog-to-digital conversion techniques; open loop systems; closed loop systems; inductive coupling; high speed systems; noise and shielding; automated testing of A/D and D/A converters; device service routines; signature analysis. Includes laboratory experiments and design projects. Design content: 3 hours. Prereq: 351.

454 Open System Interconnection (OSI) Protocols (4) OSI reference model based networks. Manufacturing Automation Protocol (MAP) and Technical Office Automation Protocol (TOP) includes material from International Standards Organization (ISO) standards, Draft International Standards, and Working Papers. IEEE standards, MAP, and TOP. Special topics include laboratory work on MAP 2.x and 3.0 network supporting programmable logic controllers and personal computers using Manufacturing Messaging Service (MMS). Special projects with an emphasis in using one of the Factory Communication protocols. Project oriented using a microcomputer kit having a monitor program and development system with cross-assemblers, file management, and simulation capability. Interfacing and hardwaresoftware trade-offs in interrupt driven applications. Grade is dependent upon number of projects completed, homework solutions, and engineering notebook. Includes laboratory experiments and design projects. Design content: 3 hours. Prereq: 351.

455 Engineering Industrial (556) Special problems in Electrical Engineering (1-3) Topics relating to recent developments and practice. May be repeated. Prereq: Consent of instructor.

456 Special Topics in Electrical and Computer Engineering (1-3) Topics relating to recent developments and practice. May be repeated. Prereq: Consent of instructor.

461 Plasma Magnetohydrodynamic Engineering (3) The MHD approximation, MHD waves and instabilities; MHD stagnation points in pulsed and steady-state power generation. Applications to fusion, energy, industry, and astrophysics. Design content: 1 hour. Prereq: 361.

462 Plasma Kinetic Theory Engineering (3) Introduction to kinetic theory of plasma systems; driven waves in a plasma; transition from multiple beams to a continuum; Vlasov and Landau theory; microwave generation in plasma and traveling wave tubes; free electron lasers; cyclotron resonance, the gyrotрон and orbitron. Design of plasma devices. Design content: 1 hour. Prereq: 361; 461 or consent of instructor.

463 Introduction to Fusion Energy (3) High temperature plasmas relevant to fusion plasmas, principles of plasma confinement, the tokamak reactor, alternate magnetic confinement concepts, advanced fusion fuels, fusion technology, plasma engineering and fusion reactor design studies. Includes design project which integrates material in 463 and 464. Design content: 2 hours. Prereq: 463 or consent of instructor. (Same as Nuclear Engineering 464.)
tation and assignment problems) and dynamic programming. Prereq.: Mathematics 231 and 200.

302 Work Methods and Measurement (3) Job analysis, job evaluation, design of wage structures, design of workplace layout, flow charts, activity charts and methods improvement. Prereq.: Mathematics 200. Credit/no credit grading only. Prereq.: Senior standing.

304 Introduction to Human Factors Engineering (3) Human capabilities and limitations affecting work, work place, and work environment design. Emphasis on human-as-machine interface, human-in-the-loop transformation of human outputs, the design of human-machine interfaces, the analysis of stress on performance, environmental factors such as noise, lighting, and atmospheric conditions. Focus on designing the task to fit the person. Prereq.: Junior standing.

305 Motion and Time Study (3) Design of work methods including analysis, improvement, and timing of work and determining standards. Prereq.: Non-industrial engineering students. Prereq.: Junior standing.


402 Production System Planning and Control (3) Theory and application of forecasting systems including regression and time series models. Independent demand inventory models, including development of safety stock. All models applicable for service and manufacturing systems. Prereq.: E&S&M 321. Credit/no credit grading only. Prereq.: Senior standing or consent of instructor.

403 Production Facilities Design and Material Handling (3) Design of production facilities including plant layout and analysis and planning for overall moving, packaging and storage of materials. This includes office layout and service areas. Principles applicable to design of facilities for such diverse groups as hospitals, banking, and industry. Prereq.: 302, 401.

404 Senior Seminar (1) Discussions, lectures and trips to unify students educational experience. Prereq.: Senior standing in Industrial Engineering.

405 Engineering Economy (3) Methods and problems in discounted cash flow techniques. Decisions among engineering alternatives involving economic justification, operational economies, and cost of capital equipment. Consideration of inflation, taxes, economic life of equipment, and sensitivity of decision to changes in fac tor prices.

406 Simulation (3) Simulation of complex industrial processes using the available simulation languages. Computer generation of random numbers and outcomes of random process variables. Design of industrial processes using simulation. Analysis of systems with waiting lines using system simulation. Prereq.: 200. Credit/no credit grading only. Prereq.: Senior standing or consent of instructor.

410 Predetermined Time Systems (2) Work design and measurement using predetermined time system such as Methods Time Measurement. Basic Motion Time Study or Work Factor. Theory and application. Prereq.: 302.

411 Planning and Scheduling (3) Forecasting, making, and planning. Performance measures for job shop and flow shop scheduling. Techniques for generating production schedules and a comparison of different material Requirement Planning and Just-in-Time philosophy. Prereq.: 402.

412 Quantitative Methods in Project Management (2) Project planning, scheduling, and control based on networking and precedence diagramming methods. In cludes topics such as PERT Critical Path Method, CPM, multi-project control, computer applications, and PERT methods of handling uncertainty in activity time estimates.

414 Laboratory and Methodology in Human Factors Engineering (1-3) History oriented identification of human factors problems. Instrumentation and measurement of human capabilities and limitations, environmental factors that affect work such as temperature-humidity, lighting and noise. Measurement of task loading effects and effects of interface design on human performance. Selected group project. Prereq.: 304 and senior standing.


422 Senior Industrial Engineering Problems Analysis (3) Application of Industrial Engineering to field assignments in local organizations, including problem definitions, analysis and presentation. Prereq.: 402, 403 and 465.


440 Total Quality Management (3) The philosophy of continuous improvement in organizations involving management and implementation issues; definition, identification and analysis of systems as compared to process analysis and improvement; flowcharts, pareto diagrams, cause and effect diagrams and the seven new tools; data collection and control strategies; capabilities analysis; quality of design; components of variation; measurement issues; issues relevant to continuous improvement processes; management of systems; the use of classical statistical tools such as correlation and experimental design to improve system value. Course contains a lab component to provide hands-on experience. Prereq.: IE 300 and senior standing or consent of the instructor.

494-495 Special Topics in Industrial Engineering (3, 3) Recent developments in Industrial Engineering including new approaches to methods, simulation techniques and new methodologies. May be repeated once. Prereq.: Senior Standing and consent of instructor.

ENGINEERING MATERIALS SCIENCE (638)

201 Introduction to Materials Science and Engineering (3) Correlation of atomic structure, crystal structure and microstructure of solids with mechanical, physical and chemical properties of engineering significance. Prereq.: Chemistry 130. E

300 Materials Laboratory Procedures (1) Thermome- try, characterization, dimensional analysis, word processing and graphics usage, data analysis, report writing. Prereq.: 201.

302 Mechanical Behavior of Materials I (3) Tensile testing of metals, ceramics and polymers; deformation mechanisms in the various materials, and non-crystalline forms; rubber elasticity, viscoelastic behavior, creep, time-temperature superposition in polymers, fatigue. Prereq.: 201, 303, or consent of instructor.

303 Thermodynamics of Solids (3) Applications to solids of free energy, activity; Raoult's and Henry's laws; gas-condensed phase equilibrium, phase stability, phase rule, multicomponent systems. Prereq.: Chem. Engr. 200.


322 Principles of Metallic Materials (3) Property control of materials selected from the ceramic, plastic and metal classes. Prereq.: 303. F

330 Materials Science I (3) Correlation of atomic structure, crystal structure and microstructure of solids with mechanical, physical, and chemical properties of engineering significance. Prereq.: Chemistry 130. E

390 Materials Seminar (1) Professional and ethical considerations, safety, patents, product liability, Satisfactory/No Credit grading only.

391 Principles of Metallurgical Processing (3) Synthesis and molecular structure of polymers; polymerization kinetics; molecular characterization; crystallinity and glass transitions; crystallization; other important polymer properties. Rheology and processing. Prereq.: 201.

392 Principles of Ceramic Materials (3) Characterization of ceramic materials as to their crystal structure, their mechanical, electrical, and optical properties. Ceramic factor production from initial raw body fabrication through the firing stage. Prereq.: 201.

393 Materials Seminar (1) Professional and ethical considerations, safety, patents, product liability. Satisfactory/No Credit grading only.

401 Diffusion and Phase Transformations (3) Diffusion; phase transformations; the elastic and plastic mechanisms of diffusion. Thermodynamics of phase equilibrium. Kinetics and morphology of phase transformations. Prereq.: 201, 303. F

405 Structural Characterization of Materials (3) X-ray diffraction and fluorescence; scanning and transmission electron microscopy; microanalytical techniques.


422 Chemical Process Metallurgy (3) Application of chemical thermodynamics to metallurgical processing. Ferrous and nonferrous pyrometallurgical refining, slagging processes, solidification, gas-metal processing. Prereq.: 303. F

426 Materials Joining (3) Processes for joining metals; polymers and ceramics: mechanical, adhesive, fusion solidification/crystallization; surface characteristics necessary for joining and chemical effects on structure and properties of joints; design of joints. Prereq.: 201.

443 Polymer Processing (3) Rheological measurements through tube rheometry; extrudate swell; selected applications, including screw extrusion, injection molding, synthetic fibers, including structure development, properties.

444 Plastics Fabrication and Design (3) Lectures, laboratories and field trips, unit operations of plastics fabrication; plastics classification, design and selection criteria; processing techniques; characterization laboratory. Sp

470 Environmental Degradation of Materials (3) Mechanical, measurement techniques and control of environ mental degradation processes in metals, polymers, ceramics and composites; materials selection and design considerations. Prereq.: 201. Recommended for chemical engineering, mechanical engineering, civil engineering and electrical engineering and chaos mechanics. F

472 Fundamental Principles of Composite Materials (3) Physical principles basic to the design, manufacture and application of fiber-reinforced composites, metals, ceramics, polymers and composites. Prereq.: 201 or equivalent. (Same as Engineering Science and Mechanics 426) F

474 Biomaterials (3) Metals, polymers and ceramics utilized in orthopedic, cardiovascular, and dental surgical implant devices; corrosion and degradation problems; material properties of primary importance; tissue response to synthetic materials. Prereq.: 201. Recommended for engineering majors. Prereq.: 201 or equivalent. F

475 Fracture-Safe Design (3) (Same as Engineering Science and Mechanics 423) F

491 Materials Design I (3) Analysis of materials requirements and performance in engineering structures and components; design aspects of materials selection and implementation. Prereq.: 201 and consent of instructor.


494 Special Project Laboratory (1-3) Group or individual investigation of problems in materials science and engineering. May be repeated to a maximum of 6 credits. Prereq.: 201 and consent of instructor.

496 Thesis (3) Research problems in materials science and engineering with prior approval of a professor. May
be repeated once. Prereq: Senior standing or consent of instructor.
486 Special Topics in Materials Science and Engineering (1-3) Recent developments in materials research, design, experiments and applications. Prereq: Senior standing or consent of instructor.

ENGINEERING MECHANICAL (650)
332 Thermodynamics II (3) Properties of gases and mixtures; chemical reactions; equilibrium; compressible flow; locations to engineering problems. Prereq: 331. F, Sp, Su
341 Fluid Flow (3) Development of mass, momentum, and energy principles for fluid systems; dimensional analysis, internal and external viscous flows. Prereq: EESM 231, Mathematics 231, 241. F, Sp, Su
344 Heat Transfer (3) Heat transfer by conduction, radiation, free and forced convection. Prereq: 331, 341, 391. F, Sp, Su
351 System Modeling and Simulation (3) Development of mathematical models of dynamic systems and dynamic simulation. Includes model formulation, transient analysis, stability analysis, stability, state space methods, and control. Prereq: 301. CEE 545, 546, 547. F, Sp, Su
401 Thesis (3) Problem investigation and report. Prereq: Senior standing. F, Sp, Su
422 Environmental Noise (3) Acoustics - measurements and control of noise in industrial and community environments. Prereq: Senior standing in engineering or consent of instructor.

ENGINEERING NUCLEAR (716)
201-202 Seminar (1, 1) Topics related to nuclear engi- neering. Satisfactory/No credit.
203 Thermodynamics I (3) First law analysis of open and closed systems, heat engines, and fluid trans- port. Prereq: 321. F, Sp, Su
301 Introduction to Nuclear Engineering (3) Nuclear systems, radionuclide decay, reactor control, reactor physics, reactor theory. Prereq: Physics 232, Mathematics 231.
304 Nuclear Engineering Laboratory (3) Radiation detection and counting instrumentation, counting statis- tics, half-life determination, gamma spectroscopy, heat transfer experiments. Prereq. 305. Coreq: 470. F, Sp, Su
305 Energy Transport (3) Development of differential and integral energy conservation; conduction and con-vection heat transfer including numerical methods; ap- plication to nuclear reactor fuel elements, reactor cores, and heat exchangers. Prereq: 204.
306 Designing for Energy Transport (3) Radiation heat transport; hydrodynamics and heat transport in boiling and condensing systems; boiling crises; fuel ele-ment and heat exchanger thermal design; steam gen- erator design. Prereq: 305.
342 Thermal Science (3) Fluid statics; conservation equations of mass, momentum, and energy; applica- tion to fluid machinery; heat transfer processes, heat conduction, thermal radiation, free and forced convec- tion. Coreq: NE 203 or ME 301.
351 System Modeling and Simulation (3) Develop- ment of mathematical models of dynamic systems and dynamic simulation. Includes model formulation, tran- sient analysis, transfer functions, frequency response, stability, state space methods, and control. Prereq: 301.
403 Nuclear Engineering Laboratory (3) Cross-section measurement, diffusion properties of materials, critical shielding experiments, control rod calibration, statistical weight, shielding and properties of materials. Prereq. 304 or 402. F, Sp, Su
404 Nuclear Fuel Management (3) Topics related to nuclear fuel cycle including mining and milling, fuel fabrication, in-core management, reprocessing and waste disposal. Economic and regulator issues. Prereq: 470.
405 Reactor Dynamics, Control and Safety (3) Reactor models, transient analysis, safety analysis, control systems, and safety systems. Prereq: 470.
406 Radiation Shielding (3) Types of radiation sources, fundamentals of gamma ray and neutron attenuation, biological effects, Monte Carlo methods, discrete ordinates, and Monte Carlo. Prereq: Physics 252.
421 Introduction to Radiation Protection (3) Fundamentals of radiation safety; radiation acci- dent; safety standards; overview of experiments, computational methods, and applications. Prereq: 301.
432 Experimental Radiation Safety (3) Radiation risk esti- mation for external and internal radiation, dose-response models, dose rate effects, prediction of radiation risks, radiation safety standards. Prereq: 301.
434 Radioactivity and Dosimetry Laboratory (3) Mea- surements of radioactivity in various materials. Character- istics of radioactive fields, radiation detectors, spectrometers, alpha and beta spectroscopy, radiation dosimetry.
463 Introduction to Fusion Energy I (3) (Same as Electrical and Computer Engineering 453.)
464 Introduction to Fusion Energy II (3) (Same as Electrical and Computer Engineering 454.)

ENGINEERING SCIENCE AND MECHANICS (335)
231 Dynamics I (3) Kinematics of rigid bodies: center of mass; kinetics of systems of particles; mass-momentum of iner- tial; kinematics of rigid bodies; Newton's laws, work, energy, impulse-momentum. Prereq: Basic Engin. 151, Mathematics 142.
271 Introduction to Biomedical Engineering (3) Overview of biomedical engineering: anatomy, physiology, biochemistry, biologics, biomechanics, and bio- mechanics. Coreq: Mathematics 241 or consent of instructor.
301 Seminar (1) Engineering professionalism and career planning; seminars on current topics. Satisfactory/ No credit. Prereq: Junior standing in EESM 231.
321 Mechanics of Materials I (3) Concepts of stress and strain; stress-strain relations; applications including axially loaded members; torsion of circular shafts, bending of beams and columns. Prereq: Basic Engin. 121, Coreq: Mathematics 241.
322 Mechanics of Materials II (3) Analysis of design of beams, singularity functions, energy methods, thick- walled pressure vessels, inelastic bending and torsion, thermal stress and failure, fatigue, buckling. Prereq: 321.
323 Mechanical Behavior of Materials (3) (Same as Materials Science 302)
341 Fluid Mechanics I (3) Basic conservation laws of fluids; hydrostatics; integral forms; energy, work, simi- tude; viscosity; turbulent flow through pipes; open channel flow; turbomachinery; performance; similarity. Demo- stration labs. Prereq: 231, Mathematics 241.
421 Materials of Engineering (3) Mechanical properties of engineering materials; data collection and processing;
time and cyclic dependent properties. 3 hours or 2 hours and laboratory. Prereq: 321, Materials Science 201.

423 Fracture-Safe Design (3) Critical view of variables controlling fracture toughness: part and flaw geometry, temperature, strain rate, section size, environment. Stabilization of fracture toughness by stress intensity factors, strain energy release rates, J integral, COD data, the concept of fracture toughness in design, fracture toughness data in design. 3 hours or 2 hours and laboratory. Prereq: 321 and Materials Science 201. (Same as Materials Science 475.)

426 Fundamental Principles of Composite Materials (3) (Same as Materials Science 472.)

431 Fundamentals of Vibrations (3) Free and forced vibrations of damped and undamped lumped parameter systems; energy methods; free vibration of continuous bodies. Prereq: 231, Mathematics 231.

433 Dynamic Systems (3) Three dimensional dynamic systems of particles and rigid bodies; gyroscopes; variable mass systems; central force motion; Lagrange's equations; stability; transfer functions. Prereq: 231.

435 Engineering Acoustics (3) Concepts of acoustics, measures of sound and their units; noise generation and transmission, noise control principles and application, materials and procedures for noise abatement. Prereq: 431.


454 Computational Mechanics in Design (3) Computational techniques applied to engineering design problems. Prereq: 431, 452, 453.

461 Experimental Stress Analysis (3) Theory, techniques, and instrumentation of resistance strain gages; theory and techniques of brittle coatings method; introduction to other strain measuring devices. 2 hours and laboratory. Prereq: 321, ECE 301.

463 Photomechanics (3) Photoelasticity, photelastic coating method. Stress methods, interference, holography. 2 hours and laboratory. Prereq: 321, Physics 232.

455 Dynamic Data Acquisition (3) Use and calibration of instrumentation for measuring and recording dynamic events; Fourier analysis, transfer function analysis, digital signal processing, computer data reduction. Prereq: 341, Mathematics 231.

471 Clinical Engineering and Bioinstrumentation (3) Function and characteristics of health care delivery systems including hospital organization and health care economics; development and management principles for a hospital-based clinical engineering program. Biomedical instrumentation system operational characteristics; performance of transducers, signal conditioning, data readout and storage devices; evaluation of commercially available systems, selection and procurement methods, custom-designed systems, equipment maintenance, calibration and control programs for hospitals. Ethical issues and professional engineering. Prereq: 271, ECE 301.

473 Biomechanics (3) Mechanical properties of living tissues; biomechanics of injury; mechanics of prosthesis for artificial limbs; deformation theories of biophysical problems related to impact. Prereq: 321.


494-495 Special Engineering Science Topics 1(3), 2(3) Problems related to recent developments and practice may be repeated once for credit. Prereq: junior or senior standing, consent of instructor.
Courses of instruction

145 Romantic Poetry and Prose I (3) Emphasis on Keats, Shelley, and Byron, with readings from Hazeltine, Peacock, and other prose writers.

146 Victorian Poetry and Prose I (3) Emphasis on authors such as Tennyson, the Pre-Raphaelites, Carlyle, and Arnold.

149 Victorian Poetry and Prose II (3) Emphasis on authors such as Browning, Arnold, Hopkins, Hardy, Ruskin, Darwin, and Wilde.

420 The Nineteenth-Century British Novel (3) Major novelists from Scott to Hardy.

421 Modern British Novel (3) Includes such authors as Lawrence, Joyce, Woolf.

422 Women Writers in Britain (3) Emphasis on the literary consciousness and works of women writers in Britain. Course content will vary. Authors covered may include Virginia Woolf, Doris Lessing, Mary Wollstonecraft, Mary Shelley, George Eliot, Virginia Woolf, and Doris Lessing. May be repeated for credit. Maximum 6 hours. (Same as Women's Studies 422.)


432 American Romanticism and Transcendentalism (3)

433 American Realism and Naturalism (3)

434 Modern American Literature (3) World War I to the present.

435 American Novel Before 1900 (3) From earliest sentimental novels through Brown and Cooper, and major figures to 1900, including Hawthorne, Melville, Stowe, Clemens, and James.

436 Modern American Novel (3) Authors such as Faulkner, Steinbeck, Steinbeck, Steinbeck.

441 Southern Literature (3) Southern writing from colonial period into the twentieth century, including frontier humorists, local color writers, and southern literature on the renaissance.

442 American Humor (3) Development of American humor from the early nineteenth century into the twenty-first century, with particular emphasis on Mark Twain. (Same as American Studies 442.)

443 Topics in Black Literature (3) Contents vary according to interest of students. May be repeated for credit. (Same as American Studies 442.)

444 Popular ballads and folktales of English, Scottish, and Irish literature from Columbus to Washington Irving. Course content will vary. (Same as American Studies 444.)

445 British and American Poetry (3) From Yeats and Frost to Auden, Stevens, and more recent poets.

446 British and American Drama (3) O'Neill's works as precursor to modern drama, such as Williams, Miller, Albee, and representatives of Black theater, like Bullins and Baraka.

447 Continental Drama (3) Plays in English translation by major European writers from the late Renaissance to the present, with some emphasis on the twentieth-century achievement.

448 Twentieth-Century International Novel (3) Such authors as Joyce, Camus, Kafka, Nabokov.

449 Persuasive Writing (3) Persuasive strategies in student and professional situations. Practice in mastering effective logical and emotional appeals.

450 Technical Editing (3) Editing technical material for publication. Principles of style, format, graphics, layout, and production management. Prereq: Should be taken after 461.

451 Advanced Technical and Professional Writing (3) For students planning careers in industry, education, and government who need technical writing skills. Writing of definitions, proposals, contracts, sets of instructions, descriptions of mechanisms, recommendation reports, abstracts, proposals, and major reports. Prereq: Junior standing in student's major or consent of instructor.

452 Writing for Publication (3) Principles and practices of writing for publication. Dissertations, theses, articles, and reports in science and technology. Prereq: Should be taken after 461.

461 Advanced Technical and Professional Writing (3) Development of skills acquired in basic Writing. Prereq: Consensus of consent of instructor.

462 Advanced Fiction Writing (3) Development of skills acquired in basic Fiction Writing course. Prereq: Consensus of consent of instructor.

463 American English (3) Phonological, morphological, and syntactic characteristics of major social and regional varieties of American English, with attention to regional, functional, and implications for cultural pluralism. Prereq: 371 or 372 or Linguistics 200 or consent of instructor. (Same as Linguistics 472 and Sociology 471.)

472 Teaching English as a Second or Foreign Language I (3) Grammatical structures of English with emphasis on particular grammatical difficulties of non-native learners of English. Basic phonological structures of English. Teaching grammar and phonology to non-native speakers with some attention to constructive analysis of English with other languages. Prereq: Second year of a foreign language. (Same as Linguistics 474.)

473 Teaching English as a Second or Foreign Language II (3) Second language acquisition theory. Issues in teaching the four language skills to learners of English. Materials and methods of language teaching and testing. Emphasis on the development of materials. Observations of and team teaching with experienced staff member. Prereq. Prereq: 474. (Same as Linguistics 475.)

474 Second Language Acquisition (3) How humans learn second languages. Examines theoretical models and research on such issues as differences between first and second language acquisition; the effect of age; cognitive factors in second language acquisition; learner variables; socio-cultural factors; and implications for second/foreign language instruction.

475 Literary Criticism (3) Historical survey of major works of literary criticism.

476 American and British Ballad (3) Popular ballads and folktales of English, Scottish, and Northern American tradition.

481 Studies in Folklore (3) Topical topics. May be repeated with different topics. Maximum 6 hours.

482 Major Authors (3) Content varies. Concentrated study of at least one of the most influential writers in British or American literary history; e.g., Donne, Tennyson, Jane Austen, Whitman, Faulkner, Baldwin, or Lawrence.

483 Special Topics in Literature (3) Topics vary. May be repeated. Maximum 6 hours.

484 Special Topics in Writing (3) Original writing integrated with reading, usually taught by a professional writer. Topics will vary. May be repeated. Maximum 6 hours.

485 Special Topics in Language (3) May be repeated. Maximum 6 hours with consent. (Same as Linguistics 485.)

486 Special Topics in Criticism (3) Content varies. Special topics in theoretical and practical approaches to British and American literature. May be repeated with consent of department. Maximum 6 hours.

489 Special Topics in Film (3) Content varies. Special topics in film theory and practice. May be repeated. Maximum 6 hours.

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

492 Off-Campus Study (1-15) Seeing, studying, and writing about drama as performed in New York City.

493 Independent Study (1-6) Tutorial in subjects not adequately covered in regular courses. May be repeated for a total of 6 hours credit.

495 Introduction to Rhetoric and Composition (3) Introduction to the historical, theoretical, and empirical study of rhetoric in modern culture and its implications for the teaching of composition.

496 The Rhetoric of Legal Discourse (3) Applying basic principles of persuasive writing to legal materials.
ENTOMY AND PLANT PATHOLOGY (341)
306 Forest Protection (3) Biological, economic and legal consideration of fire, insects, vertebrates, wind, and pollutants in the forest ecosystem. One or more all day or overnight field trips may be required. 2 hours and 1 lab. (Same as Forestry 306.) Sp, E

313 Plant Pathology (3) Introduction to the microorganisms and environmental conditions causing disease in plants. Biology of pathogens. Host-pathogen interactions, disease development and principles of control. Prereq: Six hours of Biological Science. 2 hours and 1 lab. (Same as Botany 313.)

321 Economic Entomology (3) Structure, life history, habits, and control of important insect pests of farm, garden, orchard or household. Six hours of Biological Science. 2 hours and 1 lab. Sp, E

325 Veterinary Entomology (3) Identification, biology, and control of arthropods that attack livestock and poultry. Introduction to entomology. Methods of insect control, major pest species and groups and problems associated with specific host production operations. Prereq: Biology 122 or equivalent. 2 hours and 1 lab. F, E

EXERCISE SCIENCE (347)
100 Orientation to Exercise Science (1) Overview of discipline and professional areas for incoming Exercise Science majors. Taken first semester in student's major.

260 Exercise Science Practicum (1) First practical experience to support and clarify career goals. Satisfactory/No Credit grading only. Prereq: 100.

276 Fitness for Life (2) Evaluation and discussion of factors related to optimal health: cardiorespiratory function, muscular strength and endurance, flexibility, low back function, nutrition, and stress. Emphasis on evaluation of current status with recommendations for change toward reasonable health-related goals. (Same as Physical Education 276.)

322 Fitness Activities (2) Methods of instructing and leading fitness activities, including swimming, exercise to music, water activities, and fitness games. 1 hour lecture; 3 hour lab. Prereq: At least junior standing and progression to the major.

325 Athletic Training Techniques (3) Prevention of athletic injuries through conditioning, programs and practices; recognition and immediate treatment of injuries. Prereq: 332 and progression to the Exercise Science major or consent of instructor.

330 Wellness Through Health, Leisure, and Physical Activity (3) (Same as Health 330.)

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

350 Disease and Injury: Epidemiological and Demographic Perspectives (3) Disease and injury mortality morbidity patterns; trends, differentials and causes are examined from perspectives of population-based sciences of epidemiology and demography. Completion of college course in statistics or mathematics is required.

380 Special Topics (1-3) Study in selected disciplinary or professional areas of Physical Education. May be repeated for credit. Prerequisite: permission to the major.

411 Adapted Physical Activity (3) Working with individuals with developmental and disabilities, with emphasis on nature of disability and implications for programming. Prereq: Exercise Science majors must have a cumulative GPA of 2.5 to register for this course.

412 Practicum in Adapted Physical Activity (1) Working with individuals in education or clinical settings; where an emphasis is placed on teaching gross and fine motor skills. Prereq or Coreq: 411.

414 Fitness Testing and Exercise Prescription (3) Relationship of body composition and bodyfunction to body composition, strength and flexibility, Measurement and evaluation of fitness in normal populations. Prereq: Zoology 230. Must have a cumulative 2.5 GPA. (Same as Health 414.)

422 Applied Kinesiology (3) Study and emphasis of human movement with emphasis on biomechanical principles and their application to movement and neuromuscular fitness. Prereq: 332. Exercise Science majors must have a cumulative 2.5 GPA.

425 Exercise Science Practicum II (1-6) Supervised experience in exercise/fitness areas. May be repeated for a maximum of 10 hours. Satisfactory/No Credit grading only. Prereq: 260, 322, 332, 414, progression to the major and consent of instructor.

480 Physiology of Exercise (3) Lecture and class dealing with functions of the body in muscular work. Topics include physiological aspects of fatigue, training and adaptation to environment. Prereq: Zoology 230 or 440. 2 lectures and 1 lab. (Same as Zoology 480.)

490 Exercise Physiology/Fitness Internship (12-15) Full-time practice experience in fitness, exercise science and related fitness area. Satisfactory/No Credit grading only. Prereq: 442, 426, 480, and consent of instructor.

493 Directed Independent Studies (1-3) Independent study in a specialized area with physical education. May be repeated. Maximum 9 hours. Prereq: Consent of advisor and progression to the major. Satisfactory/No Credit or letter grade.

FINANCE (349)
Accounting 201-202, Economics 201, and Statistics 201 are prerequisites for Finance courses. Finance 301 is prerequisite to all 400 level courses.

301 Financial Management (3) Principles of financial management. Investment, financing and asset management functions of the firm.

421 Investment Analysis (3) Principles and concepts of asset valuation in competitive and efficient financial markets. Basic analytical tools are developed and used to study valuation of different types of securities. Major writing requirement. Prereq: 301.

422 Portfolio Analysis and Management (3) Portfolio theory and evidence of behavior of stock returns with a view to determining rational investment policy. Includes statistical analysis for risk and return of portfolios, portfolio evaluation and selection and related extension of portfolio analysis. Prereq: 301, 421 and Management 303.

430 Financial Markets (3) Role of short and long term financial markets in the process of capital formation and allocation. Theories and mathematics of interest rates in money and capital markets. Prereq: 301.


460 Advanced Topics in Financial Management (3) Contemporary issues in corporate finance, liquidity and current asset management, corporate growth and control, international financial transactions, and pension fund management. Prereq: 301, 450.

470 Risk Management and Insurance (3) Identification, measurement and decision making with regard to insurance-type risks facing the firm. Emphasizes handling these risks in the area of corporate finance. Prereq: 301.

471 Estate and Financial Planning (3) Process of estate accumulation, safekeeping, and distribution, with particular emphasis on impact of insurance and taxation. Prereq: 301.

481 Real Estate Finance and Investment Analysis (3) Principles of financing, investing and managing real property. Utilizes discounted cash flow models and ratio analysis. Current federal tax law applicable to real property. Limited partnerships and other real estate ventures. (Same as Urban Studies 481.) Prereq: 301.

482 Urban Development and Finance (3) Economic analysis of determination of urban land value and use, and discussion of current urban problems in the United States. Primary and secondary mortgage markets and economic analysis of the effects of these markets on urban development. (Same as Urban Studies 482.) Prereq: 351.

FIRST YEAR STUDIES
100 Academic Prelude (1) Introduction to the intellectual and cultural resources of the university in its diverse forms. Designed for entering students. Satisfactory/No Credit grading only. F

101 Approaches to the University (2) Integration into the academic life of the campus, including the nature and purpose of a college education, career planning, the organization of university disciplines, and assessment of special needs in areas such as time management, study skills, counseling, and financial aid. Satisfactory/No Credit grading only. Meets twice weekly.

410 Peer Mentoring Seminar (2) Designed to prepare the undergraduate student to mentor the freshman student. Includes theories of helping, the development of mentoring skills, cognitive and developmental theories of the college, and investigation of the problems of transition. Meets weekly.

FOOD SCIENCE AND TECHNOLOGY (390)
140 The Food Industry (3) Role of the food industry in providing an adequate, safe food supply for the United States and international markets. Interaction of the food industry with governmental agencies and consumers. 2 hours and 1 lab. F

269 Meat Evaluation and Grading (2) Grading standards for quality and yield; principles for evaluating beef, pork, lamb, and application of standards for institutional meat cuts. Prereq: Meat Science 140 or consent of instructor. 2 hours lecture and 1 lab. S

350 Dairy Products I (3) Procurement, processing and distribution of fluid milk. Evaluation and scoring of milk, ice cream, milk chocolate, and butter. Prereq: 140 or consent of instructor. 2 hours lecture and 1 lab. S

360 Meat Science (2) Carcass characteristics of meat animals, muscle structure and composition, cut identification, curing, freezing and cooking. Sp

369 Meat Science Lab (1) Slaughter and processing methods for beef, pork, lamb and poultry. Prereq: 360 or concurrent enrollment. Sp

401 Food Technology and Science Seminar (1-2) Recent research in food science and written reports. May be repeated; maximum 3 credit hours. Prereq: Senior standing or consent of instructor. F, Sp

410 Food Chemistry I (3) Reactions of proteins, enzymes, and additives in foods. Study of physical-chemical interactions of food materials. Prereq: Chemistry 110 or equivalent. 2 hours and 1 lab. F

411 Food Chemistry II (3) Reactions of inorganic compounds, carbohydrates, lipids and vitamins in foods. Prereq: Chemistry 110 or equivalent. 2 hours and 1 lab. Sp

420 Food Microbiology (2) Physical, chemical and environmental factors moderating growth and survival of foodborne microorganisms; pathogenic and spoilage microorganisms affecting quality of foods and their control. Prereq: Microbiology 210. Coroq: 420. F


430 Sensory Evaluation of Food (3) Principles and methods of sensory evaluation of foods. Prereq: Basic statistics. 2 hours and 1 lab. F

440 Preservation of Food (3) Prevention of deterioration and spoilage of foods. Methods of preservation.
FORESTRY (396)

301 Forest and Wildland Resource Economics (3) Production functions, supply-demand and market analysis; non-market projects and programs; economic analysis and decision models; investment and financial analysis; managerial economics; taxes; forest products marketing. Prereq.: Economics 201 or consent of instructor. F

306 Forest Protection (3) Coreq.: 322, 323, 324, 326, 329 and 330. (Same as Entomology and Plant Pathology 306.) F

321 Wildland Recreation (3) Philosophical foundation of recreation; planning, development, and management of forest recreation resources; interpretation of forest resources. Overnight weekend field trips may be required. F

326 Silvicultural Practices (3) Application of silvicultural techniques; tree improvement; use of herbicides; fire management. Prereq.: Forestry, Wildlife and Fisheries 312. Coreq.: 304, 322, 323, 324, 326, 329, and 330. F


324 Forest Resource Analysis (3) Growth and yield prediction; timber harvest techniques; goal setting under multiple use concepts; approaches to regulation; financial aspects of forestry with computer simulation. Prereq.: Hickory Mills and Fisheries 301. Coreq.: 305, 322, 323, 325, 329 and 330. F

325 Land Measurement Techniques (2) Surveying techniques; road layout and construction as applied to forestry; timber harvest techniques. Prereq.: FW 315. Coreq.: 306, 322, 323, 324, 326, and 330. Sp

329 Forest Resource Inventory (2) Tree, log and lumber grading and scaling; land inventory and stand mapping; volume estimation. Prereq.: FW 315. Coreq.: 305, 322, 323, 324, 326, and 330. F

330 Ecosystem Prescription Preparation (1) Analysis of resources on assigned tract of land and synthesis of situation to address problem assigned. Oral presentation and written report required. Coreq.: 303, 322, 323, 324, 326, and 330. Sp

331 Wood Properties and Uses (2) Wood as a biological material; detailed examination of the woody cell wall; influence of environmental and site conditions on wood formation; physical and mechanical properties of wood; and the relationship of the woody cell wall to these properties; wood use in important commercial products; day field trip may be required. Prereq.: Botany 110 or consent of instructor. Coreq.: 332. Sp

332 Wood Identification (1) Cell structure and arrangement as a tool for species identification; microscopic and hand lens identification of important commercial softwoods, hardwoods and foreign woods; laboratory procedures for making temporary slides for microscopic examination; student cost of reference collection of wood samples; day field trip may be required. Prereq.: Forestry, Wildlife and Fisheries 311 or consent of instructor. Coreq.: 331 for Forestry majors. Sp

FORESTRY, WILDLIFE AND FISHERIES (398)

211 Introduction to Forestry, Wildlife and Fisheries (3) History of natural resources policies and practices; social perspectives and attitudes concerning natural resources and their use; techniques of integrated natural resources management, ecological principles, current policies, social trends, and forest and wilderness use. Day-long field trips may be required. Sp

250 Conservation (3) Use and abuse of wildlife resources. History, perspectives and current management of forests, wildlife, and fish of North America including aspects of outdoor recreation and pollution problems. Sp

300 Current Issues in Renewable Natural Resources (1) Current research topics presented by different university speakers each week; student discussion and interaction with speaker; some written work required; topics and special topics of interest to the instructor may be offered; all class meetings may be repeated. Maximum 3 hours. Satisfactory/No credit only. F

311 Dendrology and Silvics of North American Trees (3) Identification, classification and nomenclature of important North American forest trees and woody shrubs; forest associations; silvical characteristics of trees and stands as the basis for the practice of silviculture. Prereq.: 1 year of Botany or Biology. 2 hours and 1 lab. Sp

312 Principles of Silviculture (2) Principles for treating forest stands to achieve selected objectives. Coreq.: 311 and (for Forestry majors) 313.1 hour and 1 lab. F

313 Measurements and Sampling (2) Measurement techniques and sampling methods for vegetation; estimating biological productivity; estimation of population numbers; coreq.: Statistics 201. Coreq.: (for Forestry majors) PSS 210 and 312. 1 hour and 1 lab. F

315 Forest Soils and Watershed Management (3) Soil influences, properties, water quality, and processes; chemical and physical factors; soil and water conservation practices for forest, range and agricultural use. F

316 Managing Natural Resource Organizations (3) Evolution of natural resource professions and organizations. Culture and structure of natural resource organizations. Organizational and managerial functions. Operations and strategic issues including case studies. Prereq.: 211. 2 hours and 1 lab. Sp

317 Principles of Wildlife and Fisheries Management (3) Ecological relationships of wild animals with other animals and their habitats. Biological, social and economic aspects of their management. Prereq.: 211 or 250 or consent of instructor. F

401 Wildlife Habitat Evaluation and Management (3) Ecological relationships between wildlife and their habitat: Evolution, modeling, and management of wildlife habitats; effects of land-use practices; mapping wildlife habitats. Weekend field trips required. Prereq.: 317 or Biology 200. 2 hours and 1 lab. F

416 Planning and Management of Forest, Wildlife and Fisheries Resources (3) Integrated forest and wildlife resource management through developing land management plans and analyzing case studies including conflict resolution. Prereq.: Senior standing. 1 hour and 2 labs. Sp

FRENCH (405)

111-112 Elementary French (3,3) Language Laboratory required. Must be taken in sequence. Not available to students eligible for French 150. F

150 Intermediate French Transition (3) Prereq: Two years of high school French and a placement score below the level required for admittance to French 211. Since 150 is a review of elementary French, students who receive credit in this course may not also receive credit for any other 100 level French course and therefore also forfeit the six hours of elementary language credit awarded through placement examination. For electrician.

199 French Language and World Business (2) The course will examine the importance of foreign trade at the local, state, and national levels. An interdisciplinary team from the faculty of the colleges of Business and Arts and Sciences will provide an overview of the value of language study and international cultural awareness in world business. Restricted to students majoring in the Language and World Business major concentration. See the Director for further information. F

211-212 Intermediate French (3,3) Prereq.: 150 or 112 or Departmental Placement Exam. Must be taken in sequence. Students standing in 200 level courses from high school will receive six hours of elementary French credit. F

217-218 Honors: Intermediate French (3,3) For students of superior ability in French. Incoming freshmen admitted on basis of diagnostic test, high school average, and performance on ACT. Class limited to a maximum of 15 for individual attention. Students follow enriched program with emphasis on writing and oral proficiency, including literary selections. Students with a grade of A in 211 may enter 216 with permission of instructor. Credit 210 given to students receiving a grade of A or B in the course. F, Sp

291-292 French Literature in English Translation (3,3) 291-From the origins through the Age of Voltaire. Songs of Robert de Bordeuville, Montesquieu and the classical period, and Voltaire. 292-Diderot, 19th, and 20th centuries; Flaubert, Rimbaud, Sartre, Camus. May not be counted toward the major or Minor. F
Courses of Instruction

300 French Transition (2) Development of linguistic skills necessary for satisfactory work in courses above 300. Recommended for students who would benefit from preparation in basic skills of reading, speaking, and writing French. May not be counted toward the major or minor.

301-302 Elements of French for Upper Division and Graduate Students (3,3) Elements of language, elementary grammar. Open to good students preparing for language examinations, and upper division students desiring reading knowledge of the language. Undergraduate credit only. Not for credit for those having had 111-112 or equivalent. No auditors.

333-334 Intermediate Composition and Conversation (3,3) Grammatical analysis of modern French prose; review of grammatical principles and their application in the comprehension and appreciation of both written and oral exercises in free composition. Prereq: 212, 218 or equivalent. Either 342 or 345 may be applied toward the major, but not both.

345 French for Business (3) Contemporary French language as it applies to business transactions. Understanding and composing business letters; oral communication and elements of French legislation pertinent to good business practices. Either 342 or 345 may be applied toward the major but not both. Prereq: 212, 218 or equivalent.

351-352 History of French Literature (3,3) Chronology of French literature in relation to the specific historical developments that have influenced it. Prereq: 212, 218 or equivalent.

353 Aspects of French Literature (3) Study of masterpieces from the great literary movements and counter-movements. Prereq: 212 or equivalent.

400-401 Consecutive and Simultaneous French English and English-French Translation (3,3) Consecutive Translation to and from English. Introduction to simultaneous translation to and from English, training of students with good knowledge of French for consecutive and simultaneous interpretation from French into English; and vice versa, on a variety of subjects such as business, politics, science. Prereq: 342, 345 or equivalent. Prereq: 212 or 218 or equivalent.

410 Medieval French Literature (3) Major representative works of Medieval French Literature. Texts in modern French, Prereq: 212, 218 or equivalent. (Same as Medieval Studies 410.)

411 French Literature of the 16th Century (3) Highlights of 15th-century French literature. Excerpts from Racine and Montaigne; readings of poems from the 15th century. Prereq: 212, 218 or equivalent.


413 French Literature of the 18th Century (3) Major works of the Enlightenment. Prereq: 212, 218 or equivalent.


416 Survey of Francophone Literature (3) Introduction to writing in French outside of France. Prereq: 212, 218 or equivalent.

419 Readings in French Literature (5)

420 French Cinema (3) The French cinema from its earliest days through the New Wave directors. Prereq: 212 or consent of instructor. Emphasis on a particular theme or school. Prereq: 212 or consent of instructor.

421 Phonetics (3) Foundation in the science of phonetics. Practical exercises and individual performance. Laboratory training highly recommended. Students from departments outside Romance Languages may take this course for graduate credit. Graduate credit is not offered. Prereq: 212 or admission to the Department of Romance Languages. Prereq: 212, 218 or equivalent.

422 Advanced Grammar (3) Improving one's own style studying basic and more refined structures of the French language. Writing creative free compositions. Prereq: 342 or 345.

423-424 Advanced Conversation (1,1) Informal conversation with native speaker on contemporary topics. Stress on spoken language and outside preparation. Meets two hours per week for a one semester credit. Prereq: 342 or 345.

425 Introduction to Descriptive Linguistics (3) Phonetics and phonology, morphology, syntax. Types of languages, linguistic groups, dialects, and dialect geography. Application of the principles of field linguistics, dialect study; its practical use in learning languages and in language teaching. Introduction to transformational grammar. Prereq: six hours of upper division English or six hours of upper division courses in a modern or ancient language (exclusive of German and French). Prereq: 351 or 352, or consent of department. (Same as Russian 425, Spanish 425 and Linguistics 425.)

426 Methods of Historical Linguistics (3) (Same as Russian 426, German 426, Spanish 426 and Linguistics 426.)

429 Romance Linguistics (3) Development of Classical Latin through Vulgar Latin into major Romance languages. (Same as Spanish 429 and Linguistics 429.)

430 Theatrical French (2-3) Performance in one or more French plays. Prereq: 212, 218 or equivalent and consent of instructor. Can be applied to major.

431 Highlights of French Civilization (3) Survey of French civilization from the Middle Ages to World War II. Historical events, daily life, all forms of arts. Prereq: 212, 218 or equivalent. Writing-emphasis course.

432 Contemporary French Culture (3) French contemporary civilization and culture since World War II. Problems, trends and organization of French society today. Prereq: 212, 218 or equivalent.

433 Literary Portraits of French Women (3) This course is designed to acquaint students with a variety of French literary masterpieces dealing with women of different social backgrounds and of complex personalities. Not for major or minor credit in French. (Same as Women's Studies 433.)

434 Literature of Quebec (3) Survey of literature of Quebec as well as French literature connected with North America. Reading include explorer and missionary works, such as the Voyages of Champlain and the Journals of the Jesuits, as well as the literature of contemporary Quebec. Prereq: 212, 218 or equivalent.

440 Capstone Experience in French (3) Synthesizing senior colloquium and tutorial in which students reflect on their experience and discipline from a multi-disciplinary point of view. Writing-emphasis course.

445 Advanced French for Business (3) Study of contemporary French language and culture as they relate to business. A comparative approach is used to explore differences and similarities between francophone business culture(s) and those of North America. 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.

449 Internship (1-15) Career-related experiences in the United States or abroad with permission of the Language & World Business Director. For Language & World Business majors only. Satisfactory/No Credit only.

451 Foreign Study (1-15) Can be taken in sequence.

452-453 Advanced Conversation (1,1) Informal conversation with native speaker on contemporary topics. Stress on spoken language and outside preparation. Meets two hours per week for a one semester credit. Prereq: 342 or 345.

454 Independent Study (1-15) Can be taken in sequence.

GEOGRAPHY (415)

101-102 World Geography (3,3) Selected topics and regions of the world, especially those with problems or situations of considerable concern. To illustrate geographical principles of view, concepts, and techniques. Must be taken in sequence.

111-112 Geography of the Natural Environment (4,4) Characteristics and processes of the earth's surface and lower atmosphere. Oceanography. Emphasis on production and protection of land and water areas. Prereq: Math 115 or two semesters of calculus or consent of instructor.

420 Computer Mapping and Geographic Information Systems (3) Concepts, management, and presentation of digital data for spatial analysis, with emphasis on cartographic data structures, 2 hours lecture and 2 hours lab per week. Prereq: 410 or consent of instructor.

423 Cartography (3) Cartographic techniques applied to the design, compilation, and reproduction of maps and graphics, 2 hours lecture and 2 hours lab per week. Prereq: 410 or consent of instructor.

425 Introduction to Maps, Aerial Photographs, and Cartography (3) Properties, sources, uses, design, and production of maps, aerial photos, and other forms of spatial images as tools for geographical analysis. 2 hours lecture and 2 hours lab per week. Prereq: 410 or consent of instructor.

430 Cultural Geography: Core Concepts (3) Background and method of cultural geography, basic concepts and theories focusing on cultural landscape, culture regions, cultural ecology, innovation and diffusion, cultural integration, and world patterns of cultural phenomena.

435 Behavioral Geography (3) Types of human behavior, such as shopping, territoriality, commuting, residential mobility, and regional consciousness as they relate to the specific environment, and culture. (Same as Urban Studies 332.)

434 Meteorology (3) Dynamic atmosphere and resulting weather events. Nature of individual weather elements, their measurement and analysis over time and space.


361 Regional Geography of the United States and Canada (3) Physical, economic, and social distributions as they interrelate to and give distinctive character to regions of the United States and Canada. Writing-emphasis course.

362 Geography of the American South (3) Geographical appraisal of the southeastern United States, including physical environment and human resources. Origin and development of contemporary economic and cultural traits of the area. Writing-emphasis course.

365 Geography of Appalachia (3) Interrelation of physical, economic, and social patterns that give distinctive character to the region and its people, especially in southern Appalachia. Appalachia in perspective in the current American scene. Writing-emphasis course.

371 Geography of Europe (3) Physical, cultural, and economic characteristics of Europe. Emphasis on the geographical dimensions of change in contemporary Europe. Writing-emphasis course.

372 Geography of Middle America (3) Physical, cultural, and economic characteristics of Mexico, Central America, and the West Indies. (Same as Latin American Studies 372.) Writing-emphasis course.

373 Geography of South America (3) Physical, cultural, and economic characteristics of the countries of South America. (Same as Latin American Studies 373.) Writing-emphasis course.

375 Geography of Russia and the Commonwealth of Independent States (3) Geographical appraisal of Russia and the other successor states to the Soviet Union. Focus on current physical and economic systems, and human resources influence the region's future. Writing-emphasis course. (Same as Russian and East European Studies 375.)

379 Geography of Africa (3) Physical, cultural, and economic characteristics of Africa, with particular emphasis on the area to the south of the Sahara. (Same as African-American Studies 373.) Writing-emphasis course.

411 Computer Mapping and Geographic Information Systems (3) Concepts, management, and presentation of digital data for spatial analysis, with emphasis on cartographic data structures, 2 hours lecture and 2 hours lab per week. Prereq: 410 or knowledge of a computer language or consent of instructor.

425 Introduction to Maps, Aerial Photographs, and Cartography (3) Cartographic techniques applied to the design, compilation, and reproduction of maps and graphics, 2 hours lecture and 2 hours lab per week. Prereq: 410 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 lab or field period.

102 Earth, Life and Time (4) Fossils, evolution and ancient environments. Plus a review of 4.5 billion years of Earth history. 2 lecture hours and one 2-hour lab or field period.

103 The Earth's Environments (4) Contemporary problems and solutions related to human disturbance of the environment. Topics include: global climate change, pollution, resource depletion. Preqs: 101, 3 lecture hours and one 2 hour lab or field period. Fulfills laboratory science requirement for College of Arts and Sciences.

107 Honors: The Dynamic Earth (4) Laboratory and field emphasis to understanding physical processes, including the formation of rocks, plate tectonics, earthquakes, and landslides. 3 lecture hours, 2 2-hour labs, and 2 field trips. Consult current College of Arts and Sciences guidelines. Students may not receive credit for both Geology 1101 and 1102.

108 Honors: Earth, Life and Time (4) Laboratory and field emphasis to understanding fossils, evolution, and ancient environments through 4.5 billion years of Earth history. 3 lecture hours, 1 2-hour lab, and 2 field trips. Grade of B or better in Geology 107, grade of A in Geology 101, or permission of the instructor. Students may not receive credit for both Geology 1102 and 108.

201 Biodiversity: Past, Present, and Future (3) Introduction to how biodiversity has changed through time, especially past mass extinctions and current extinctions from human activities. Topics include measurement of biodiversity, how biodiversity originated, and the dynamics of extinction. May not be applied toward the Geology major.

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

203 Geology of National Parks (3) Geologically spectacular landscapes and geologic history of national parks of the world. Human attempts to preserve the Earth's geologic heritage. 3 lecture hours, plus a field trip during the term. May not be applied toward the Geology major.

310 Mineralogy (4) Introduction to crystallography, crystal chemistry, x-ray diffraction, optical mineralogy, and the structures of rock-forming minerals. Laboratory includes hand specimen identification, x-ray diffraction techniques, and microscopic identification of minerals. Preqs: 101, 102. 3 lecture hours and one 1-hour lab.

320 Paleobotany (3) Fossils and their uses in functional morphology, palaeoecology, biostratigraphy, and evolution. Preqs: 102 or consent of instructor. 2 lecture hours and one 2-hour lab.

325 Geologic History of Land Organisms (3) Origin and development of terrestrial organisms in space and time with emphasis on the fossil and present record of land plants and vertebrates. Preqs: Elementary biology sequence or consent of instructor. 2 lecture hours and one 2-hour lab or field period.

330 Igneous and Metamorphic Petrology (3) Classification and properties of igneous and metamorphic rocks, the processes that produce them, and the tectonic environments in which they form. Preqs: 310, 2 lecture hours and one 2-hour lab.

340 Stratigraphy and Sedimentation (3) Stratigraphic principles and problems of physical sedimentary processes and interpretation of depositional environments. Preqs: 101, 102 and 310. 2 lecture hours and one 2-hour lab or field work.

345 Geology of East Tennessee (1) Geology of the Southern Appalachian Mountains. 3 lecture hours. Consent of instructor required. Completion of major core courses or consent of instructor. 1 lecture hour plus field trips.

370 Structural Geology (4) Common geologic structures (faults, folds, tectonic zones) and their genetic. Laboratory includes map interpretation, cross sections, stereonets. Preqs: 101, 102, 310, Mathematics 141-142, and one of the following: Physics 151 or Basic Engineering 101.

410 Advanced Mineralogy (3) Crystal chemistry of the rock forming minerals. Interfacial properties of minerals, infrared and Raman spectroscopy, and x-ray diffraction. Preqs: 102 and 310. Laboratory exercises emphasize thin section and x-ray diffraction methods. 3 lecture hours.

420 Palentology (4) Principles of paleontological methods as applied to fossils and fossil assemblages. Preqs: 102, 103. 3 lecture hours.


430 Physical Geology (3) Principles of geology as applied to the Earth's crust. Preqs: Introductory geology or permission of instructor. 2 lecture hours and one 2-hour lab.

435 Environmental Geology (3) Principles of physical geology as applied to the Earth's crust. Preqs: Introductory geology or permission of instructor. 2 lecture hours and one 2-hour lab.

440 Field Geology (3) Summer field course for advanced undergraduate geology majors and first-year graduate students in geology. Taught off-campus and requires completion of the course for credit. A synthesis of the major aspects of the geological sciences in a societal context. Field techniques demonstrated and practiced. Preqs: Completion of major core courses (310, 320, 330, 340, 370) and consent of instructor. 2 lecture hours and one 2-hour lab.

450 Process Geomorphology (3) Integrative approach to the development of the surface of the Earth based upon case histories, maps, remote sensing imagery, 2 lecture hours and one 2-hour lab. Preqs: 101, 102.

455 Basic Environmental Geology (3) Application of the geological sciences toward a comprehension of the effects of geological processes on humans and the affects of human activities on the earth's environment. Preqs: 12 hours of geology courses. 2 lecture hours and one 3-hour lab or field period.

460 Principles of Geochemistry (3) Application of chemical principles to geological problems. Preqs: Chemistry 210-220. 3 lecture hours.

470 Applied Geophysics (3) Basic principles of geophysical exploration, with emphasis on applications to environmental problems. Includes seismic and electromagnetic methods. Preqs: 6 hours of geology courses numbered above 300. Physics 231-232, 2 lecture hours.

471 Fieldwork in Geophysics (3) Summer field course for advanced undergraduates or graduate students. Taught off-campus, and requires the full time of the student for 2 or more weeks. Geophysical investigations applied to the solution of a problem in tectonics, hydrology, or the environment. Preqs: 460 or consent of instructor.

475 Physical and Chemical Systems of the Earth (3) Development of the physical earth from the solar nebula to the present. Formation, composition and evolution of the hydrosphere, crust, mantle and core. Implications of earthquakes, volcanism, plate tectonics, geomagnetism, chemical and isotopic processes of the interior, and the earth's environment. Historical perspective on major controversies of the past, and problems unresolved today. Writing emphasis course. Preqs: 16 hours of geology courses numbered above 300 and above. 2 lecture hours and one 1 discussion period.

480 Principles of Economic Geology (4) Ore-forming processes, classification of mineral deposits, survey of different types of mineral deposits with examples, and metallogenic basins. Preqs: 301 and 310. Recommended: 460. 3 lecture hours and one 2-hour lab.
485 Principles of Geohydrology (3) Ground water flow, aquifer analysis, ground water contamination, and ground water management. Prereq: 101 or equivalent or consent of instructor. Chem 120-130 or equivalent, and Mathematics 141-142 or equivalent. (Same as Civil Engineering 485.)

490 Special Problems in Geology (1-3) Directed study or special topic. Prereq: Consent of instructor. May be repeated.

491 Foreign Study (1-15)

492 Off-Campus Study (1-15)

493 Independent Study (1-15)

GERMAN (433)

101-102 Elementary German (3,3) Language laboratory required. Must be taken in sequence. Not available to students eligible for German 150.

111 Language Laboratory (0)

112 Language Laboratory (0)

150 Elementary German Transition (3) This course is designed to prepare students for enrollment in German 201. Prereq: Two years of high school German and a placement score below the level required for admission to German 201. Since 150 is a review of elementary German, students who receive credit in this course may not also receive credit for any other 100 level German course and therefore also forfeit the six hours of elementary language credit awarded through placement examination.

199 German Language and World Business (2) The course is designed to acquaint students with the importance of foreign trade at the local, state, and national level. An interdisciplinary team of faculty from the Colleges of Business Administration and Arts and Sciences will provide an overview of the value of language study and international cultural awareness in world business. Restricted to students majoring in the Language and World Business major concentration. See the Director for further information.

201-202 Intermediate German (3,3) Must be taken in sequence. Prereq: 102 or 150 or appropriate placement exam score. 301-302 Introduction to German Literature (3,3) Prereq: 202 or equivalent. Need not be taken in sequence.

305 Readings in German (3) Topics in both literary and non-literary fields. Students or student groups are encouraged to suggest topics for future courses. May be repeated twice with approval of department. Prereq: 202 or equivalent.

311-312 Conversation and Composition (3,3) Prereq: 202 or equivalent.

323 German Film (3) A study of the German cinema from the earliest days to the present. Writing-emphasis course. (Same as Cinema Studies 323.)

331-332 Elements of German for Upper-Division and Graduate Students. Students of language, elementary and advanced readings and a final 10.000 word translation project. Open to graduate students preparing for language examinations, and upper-division students desiring reading knowledge of the language. Undergraduate credit only. No credit for students who have completed 101-102 or 107. 332 may be repeated only once for credit. A, B, C, no credit grading.

363 Modern German Culture (3) German culture from the mid-nineteenth century to the present: customs, art, music, literature, society, state. Readings in English for non-majors and in German for majors. Major credit, but no foreign language credit. A writing-emphasis course. Fulfills Upper-level Distribution Requirement for Foreign Studies for those who have not satisfied the history requirement with Western Civilization. Writing-emphasis course.

411-412 Advanced Conversation and Composition (3,3) Prereq: 311-312 or equivalent or consent of department.

420 Selected Topics in German Literature from 1750 to the Present (3) Prereq: 6 hours of 300 courses excluding 331-332 and courses in English translation, or equivalent.

421 German Lyric Poetry (3) Prereq: 6 hours of 300 courses excluding 331-332 and courses in English translation, or equivalent.

422 German Drama (3) Prereq: 6 hours of 300 courses excluding 331-332 and courses in English translation, or equivalent.

433 German Narrative Prose (3) Prereq: 6 hours of 300 courses excluding 331-332 and courses in English translation, or equivalent.

424 German Literary Movements (3) Major periods in the development of German literature since 1750. Emphasis on the problems and pitfalls of periodization.

425 Introduction to Descriptive Linguistics (3) (Same as Russian 425, French 425, Spanish 425, and Linguistics 425.)


430 German Film (3) Prereq: 6 hours of upper-division foreign language courses excluding courses in translation or graduate reading courses. (Same as Russian 426, French 426, Spanish 426, and Linguistics 426.)

433 Structure of the German Language (3) Contrastive English-German segmental and suprasegmental phonemes, contrastive English-German linguistic structures, selected topics in advanced German grammar and syntactic analysis. Prereq: 6 hours of upper-division German language courses excluding courses in translation and graduate reading courses. (Same as Linguistics 433.)

435 History of the German Language (3) Development of the Germanic languages to Middle-English through Proto-Germanic. Old High German, Middle High German to New High German, Internal and external linguistic history of the Germanic language. Prereq: 6 hours of upper-division German language courses excluding courses in translation and 331 or 332. (Same as Linguistics 435.)

445 Business German (3) German used in fields of business, government, administration and economics. Prereq: 6 hours of upper-division German excluding courses in translation and 331 or 332.

490 Internship (1-15) Career-related experiences in the United States or abroad with permission of the Language & World Business Director. For Language & World Business majors only. Satisfactory/No Credit only.

491 Foreign Study (1-15)

492 Off-Campus Study (1-15)

493 Independent Study (1-15)

497 Senior Honors (1-6) Admission by consent of department. May be repeated. Maximum six hours.

GREEK (257)

121-122 Beginning Greek (3,3) Must be taken in sequence.

261 Intermediate Greek: Grammar Review and Readings (3) Systematic review of Attic Greek and readings from selected authors. Prereq: 122.

264 Intermediate Readings in Greek (3) Content varies. Prereq: Classics 261.

401 Greek Poetry (3) Epic, lyric, drama. Authors vary. Prereq: 261.

402 Greek Prose (3) History, philosophy, and oratory. Authors vary. Prereq: 261.

405 Selected Readings from Greek Literature (3,3) For advanced students in Greek, the study of plays, the historical writings, the poetry of ancient Greece in the original Greek. May be repeated for credit. Maximum 9 hours. Prereq: 401-402 or consent of instructor.

HEALTH (449)

110 Personal Health and Wellness (3) Information and behavior necessary to approach health and wellness scientifically and to develop confidence in judgments affecting personal health and wellness.

200 Seminar in Human Sexuality (2) Problems and responsibilities of being male and female as they relate to sex and heterosexual relationships./No Credit only. F, Sp

435 Substance Use and Abuse (3) Drug and alcohol abuse problems and suspected causes, pharmacology of drugs and effects on society, strategies for intervention and education. F, Sp

465 Aging and Health (3) Aging process in a health perspective as it relates to health promotion and wellness of the aged. F, Sp

225 Alcohol/Drugs and the College Student (2) Problems related to use and abuse of alcohol and other substances. Satisfactory/No Credit only. F, Sp

230 Cardiopulmonary Resuscitation (2) Theory and skills to implement basic life support following cardiac arrest due to such conditions as heart attack, drowning, electrocution, suffocation, poisoning, drug intoxication, and vehicular and other accidents. Educational and preventive aspects of controlling cardiovascular disease. Leads to basic life support certification. F, Sp

300 Health Education, Promotion, and Behavior (3) Health education goals, roles, target populations in school, community and health fields. Health careers and opportunities; health behavior and intervention techniques; health appraisal techniques; health promotion strategies.

305 Health of Adolescents (3) Profile of health needs, interests, and behaviors of adolescents and attention to the roles and functions of practitioners relating to youth and youth culture.

306 Health Instruction in Elementary Grades (3) School health program for the child in elementary grades. Teachers become familiar with organizing and presenting health content, health materials, health curricula, community resources, and coordinating health lifestyle. Prereq: Admission to Teacher Education Program. F, Sp

310 Advanced First Aid and Emergency Care (3) Theory and practice of first aid and emergency care. Provides essential information for developing functional first aid capabilities of lay persons. Course leads to Advanced First Aid and Emergency Care certification. Applicant must be at least 18 years old for certification. E, S, Sp

325 Health Education Program Planning (3) Principles of curriculum development, administration, implementation, methodology, and evaluation.

330 Wellness Through Health, Leisure and Physical Activity (3) Emphasis on taking personal responsibility for one's health. Includes topics related to the healthy lifestyle, and provides specific guidelines of how to change inappropriate behaviors. (Same as Physical Education 330.) Sp

375 Health Communications (3) Communication strategies for health educators in various settings. Emphasis on interpersonal relationships, public relations, leadership, small group processes, health teams, and effective use of media.

400 Consumer Health (3) Major consumer health care providers and health care services; selecting, purchasing, evaluating and financing medical and health care services/products. (Same as Public Health 400.) Sp

405 Alcoholism and Alcohol Education (3) Factors which make alcoholism a serious health and safety problem. Various types of instructional/educational and intervention programs.

406 Death, Dying and Bereavement (3) Aspects of dying, death and handling the trauma of loss. Medical, financial, physical, legal and social implications of death.

414 Fitness Testing and Exercise Prescription (3) (Same as HPE 414.)

420 Sex Education As It Relates to Human Sexuality (3) Science of human sexuality. Emphasis on the trends, issues, content of sex education. F, Su

425 Women's Health (3) Factors influencing women's health and women as consumers in nation's health services delivery systems. Study of health problems/concerns of women and techniques for prevention, maintenance and/or correction. (Same as Women's Studies 425.) E, I

430 Suicide and Crisis Intervention (3) Factors which make suicide a serious health problem. Assessment, intervention, and prevention techniques.

435 Substance Use and Abuse (3) Drug and alcohol abuse problems and suspected causes, pharmacology of drugs and effects on society, strategies for intervention and education. F, Sp

465 Aging and Health (3) Aging process in a health perspective as it relates to health promotion and wellness of the aged. F, Sp
314 Renaissance Europe (3) The period traditionally seen as a transition from the late Middle Ages to modern world, interrelationship of cultural, social, economic, political and intellectual developments, with an emphasis upon history.

315 Reformation Europe, 1500-1650 (3) The period during which Europe witnessed religious conflict, economic dislocation and insurrection, political centralization, intellectual flowering known as the "Enlightenment," and the English and French revolutions.

316 Early Modern Europe, 1650-1800 (3) Dynamic conflict of a search for order in an age of revolutions, seen in the continued push for political centralization, the impact of the scientific revolution, the intellectual flowering known as the "Enlightenment," and the English and French revolutions.

319 Modern Europe, 1750-1914 (3) Political, industrial and intellectual revolutions against traditions. Topics such as the modern population explosion, urbanization, the political emergence of the middle class and the masses, nationalism, imperialism, rationalism and Romanticism in social and political thought and politics. Writing-emphasis course.

320 Contemporary Europe, 1900-Present (3) The transformation from industrial to post-industrial society and the transformation of the European nation-state. Topics such as war and depression and the consequent political and social instability; totalitarian control; de-colonization; the impact of Freud, Einstein and existentialism; welfare state and problems of European unionization. Writing-emphasis course.

321 New Testament Origins (3) (Same as Religious Studies 321.)

322 Christian Thought (3) (Same as Religious Studies 322.)

323-333 History of England (3,3) 333-1861 The period from the Anglo-Saxon invasion to 1660, origins of Anglo-American law, the monarchy and parliamentary government, the Reformation, 17th Century revolution, commercial and cultural and industrial revolutions; class conflict, empire, the welfare state, world wars, economic crises.

332-333 History of France (3,3) 332-The emergence of French civilization in the Renaissance to 1789, 333-France since the Revolution, 1789 to present.

334-335 History of Germany (3,3) 334-1648 The rise of the Holy Roman Empire, 335-Germany, 1, 1815. The first Reich's Fortune and Failure. The development of the German lands, from the medieval empire to its disintegration, through dynastic and religious realignments, to the Austrian-Prussian dualism in the time of Frederick the Great and Maria Theresa, culminating with the Napoleonic Wars of 1812-1815. The Congress of Vienna, the Restoration, 19th Century revolution, the unification of the German nation, and the problems of centralization versus national diversity.

336 A History of Austria and Central Europe: Frontier and Civilization Center (3) Austria's development, as an independent neutral nation at the crossroads of Europe, under development, ideologies in conflict with non-Western cultures, fascism and militarism, and the transformation of the European nation-state. Writing-emphasis course.

337 History of Japan (3) Japanese history from mythological origins to the present. Topics include the evolution of modern Japan, its involvement in the World Wars, and the rise of Japan as a world power. Writing-emphasis course.

338 Ancient Near Eastern Civilization (3) Bronze and Iron Ages. Origin of civilization: institutional structures; imperialism; cuneiform traditions and their perpetuation. (Same as Ancient Mediterranean Civilizations 338.)

339-370 History of the Middle East (3,3) 339-Islam and the spread of Islamic civilization to the sixteenth century. 370-The Middle East from the sixteenth century to the present. Impact of the West and background of current problems in the area. Writing-emphasis course.

371-372 African History (3,3) 371-Ethnic groups of the southern and western regions of sub-Saharan Africa and the conflict and change occurring there from 1000 B.C. through the present, Africa as a problem of Africa's development and Africa's future. Writing-emphasis course.

373 Historical Issues (3) Broad, thematic issues in historical perspective. Lecture-discussion. Especially suitable for non-majors; also open to majors.

374 The West and the World Since 1870 (3) Relationships between the West and Africa, Asia, and Latin America since 1870 across a broad spectrum of critical issues. Includes economic interdependence and underdevelopment; ideologies in conflict with non-Western cultures; fascism and militarism, and the problems of cultural disruption. Writing-emphasis course.

375 Revolutions in Historical Perspective (3) Comparative history of major revolutions which transformed political, social, economic, cultural and intellectual structures and values, such as those in France, Russia, China, Mexico, and Iran. Contrasts and common patterns in their causes, phases and outcomes. Major theories of revolution. Writing-emphasis course.

380 American Issues: War and the Peaceful Ideal (3) Exploration of the dual American values of express abhorrence to war and imperial conquests and, to engage in war and exercise economic or political dominion over other peoples. Topics include relationship between leadership and war, patterns of national dis
sent, mobilization for war, and post-war attitudes. Writing emphasis course. (Same as American Studies 380.)

385 Studies in World History (3) Variable content. Selected topics in world history involving analysis of two or more world cultures. May be repeated. Maximum 9 hours.

407 Honors: Senior Paper (3) Bibliographic research, research, and conceptual clarification for the senior paper. Required of students working for honors in history.

408 Honors: Senior Paper (3) Organization and writing of the senior honors thesis. Required of students working for honors in history. Grade of A or B required for honors credit.

421 Comparative Studies in African and African-American Societies (3) (Same as African-American Studies 421.)

430-431 European Intellectual and Cultural History (3,3) Renaissance to Revolution, 1300-1789: Romanticism to Relativism, 1750-Present.

432 Women in European History (3) Comparative analysis of the roles of women in Medieval, Renaissance and Victorian Europe. Relationship between family structure, sexual attitudes and the economic and political roles of women with an emphasis on autobiographical writings by women. (Same as Women's Studies 432.)

440 America: The Society and Its Social Record (3) Chronological survey of major currents in American social thought and social organization as well as the intellectual myths, symbols, and values that informed those directions. Emphasis is on changing nature, status, and consequences of social reform. (Same as American Studies 440.)

441 The American Frontier and Western Movement, From the Atlantic to the Trans-Mississippi West (3) Settlement and development of the "West" throughout American history.

442 Indian-White Relations in United States History (3) Dilemma of two cultures existing side by side; back-ground and development of official Indian policy; undermining of policy by frontier circumstances; Indian wars and campaigns; present-day relationship.

443-444 History of the South (3,3) Old South from colonial period through the Civil War; 444-New South from Reconstruction through the Second Reconstruction.

445 The African-American Experience from the Colonial Period to the Present (3) Topics in 18th and 20th century African-American history, such as Pan-Africanism and the effect of education on the status of Blacks. (Same as African-American Studies 445.)

446 History of African Culture (3) Topical examination of the origins and development of Africa's cultural values, attitudes and beliefs from the formation of the nation-state in Colonialism. Illustrative topics: creation of a national culture; Civil War as cultural conflict; challenge of cultural pluralism; rural versus urban values; cultural upheaval of the 1920s-30s; present-day nature of African culture. Writing emphasis course.

449 History of Tennessee (3) Tennessee's history from the 18th century to the present.

450 History of U.S. Foreign Relations to World War II (3) Examines the ideology and practice of U.S. international relations from independence to entry into the Second World War.

451 United States Military History, 1754 to the Present (3) The nation's broad strategic aims and means of achieving those goals during the 20th century. May be repeated. Maximum 9 hours.

452 The American Experience in World War II (3) Diplomacy and warfare in Europe and Asia and the impact of the war on American society. (Team-taught course.)

453 Women in American History (3) Approaches of 422 applied to American society. (Same as Women's Studies 453.)

454 Cities and Urbanization in American History (3) Origins, growth, and influence of American cities in development of the nation, from colonial era to present. (Same as Urban Studies 454.)

456 History of Sports in the United States (3) Development of sports and significance in American culture from colonial period to present. Emphasis on social, cultural, economic and political impact of both spectator and participation sports throughout American history. (Same as American Studies 456.)

460 History of Brazil (3) History of Latin America's largest nation. History of boom and bust economic cycles, slavery and the abolition of slavery, populism, military rule, and deindustrialization. (Same as Latin American Studies 460.)

461 Cuban Revolution in Historical Perspective (3) Cuban history with major emphasis on Cuban Revolution and Cuban-U.S. relations. (Same as Latin American Studies 461.)

462 History of Mexico (3) Pre-Columbian, colonial, national, and modern Mexican history, emphasizing the twentieth century's first true social revolution, the Mexican Revolution, and contemporary social and economic problems. (Same as Latin American Studies 462.)

463 Modern Latin American History in Film (3) Major events and trends in Latin America since 1945 as represented in six films made by Latin Americans. Topics include economic development, the Cuban Revolution, and Authoritarianism. (Same as Latin American Studies 463.)

470 Studies in British History (3) Variable content. Selected themes in British history. May be repeated. Maximum 9 hours.

471 Studies in Western European History (3) Variable content. Particular aspects of Western European history such as war and peace, revolutions, or nationalism. May be repeated. Maximum 9 hours.

472 Studies in Central European History (3) Variable content. May be repeated. Maximum 9 hours.

473 Studies in Eastern European History (3) Variable content. Selected aspects of Eastern European history, especially pre-Revolutionary Polish history. May be repeated. Maximum 9 hours.

474 Studies in Medieval and Early Modern European History (3) Variable content. Particular aspects of medieval and early modern Europe. May be repeated. Maximum 9 hours.

475 Studies in Latin American History (3) Variable content. Significant issues in Latin American history. May be repeated. Maximum 9 hours. (Same as Latin American Studies 475.)

476 Studies in Asian History (3) Variable content. Particular aspects of East, Southeast, and South Asian history such as modernization, China, Japanese, and others. May be repeated. Maximum 9 hours.


480 Studies in African History (3) Variable content. Different areas of the continent and diverse aspects of the African experience such as African resistance to colonialism, African political parties, the relationship of social and economic development under colonialism to social and economic conditions in modern African nations, and Apartheid and resistance in South Africa. May be repeated. Maximum 9 hours.

481 Studies in History (3) Variable content. Subject matter not covered in other courses. May be repeated. Maximum 9 hours.

482 Colloquium in History (3) Historical theme or problem; emphasis on questions and skills, with special reference to historical writing, including critical analysis of both primary and secondary sources. Recommended for seniors. Writing emphasis course.

483 History of U.S. Foreign Relations Since WW II (3) Examines the ideology and practice of U.S. international relations since World War II.

485 Studies in Cross Cultural History (3) Variable content. Comparative analysis of specific historical issues or specific facets of the relationships between two or more cultures. May be repeated. Maximum 9 hours.

491 Foreign Study (1-15) Off-Campus Study (1-15) Independent Study (1-15)

493 Independent Study (1-15)

496 Foreign Study (1-15) Off-Campus Study (1-15) Independent Study (1-15)

503 Field Study in Education (1-3) Problems of persons in active service in the field. Includes methods of teaching, curriculum materials, school-community relationships and school organizations. May be repeated. Maximum 6 hours.

510 Special Education Principles (3) Introduction to the field of special education, including the nature and causes of disabling conditions, family systems, a history of the field, and current policies. Prereq: Admission to Teacher Education Program.

520 Special Education Strategies (3) Introduction to basic special education procedures, including formal and informal assessment, development of Individual Education Plans, applied behavioral analysis, appropriate medical procedures, and effective instructional strategies. Prereq: 310, Admission to Teacher Education Program.

325 Teaching Science and Social Studies in Elementary and Middle Schools (3) Methods and materials for teaching science and social studies in elementary and middle schools. Teaching approaches common to both fields including inquiry, multi-sensory activities, and group approaches. For BS Education students only. Prereq: Admission to Teacher Education Program.

326 Studies in Latin American History (3) Variable content. Significant issues in Latin American history. May be repeated. Maximum 9 hours. (Same as Latin American Studies 462.)

351 Laboratory and Field Studies in Elementary Education (1) Simulated and actual experiences in which students apply concepts and skills from professional methods courses in a variety of school settings and levels. May be repeated. Maximum 3 hours. Prereq: Admission to Teacher Education Program. Satisfactory/No Credit grading only.

355 Elementary and Middle School Teaching Laboratory Experience (1) Simulation and micro-teaching experiences in developing skills and giving feedback to students relative to their ability to apply learning to school settings. Prereq: Admission to Teacher Education Program. Coreq: 420. F

410 Pre-Internship Seminar (1) Objectives and policies of the internship program. Must be completed the term immediately preceding the internship. Prereq: Admission to Teacher Education Program. Satisfactory/No Credit only. Sp, Su

419 Psychology and Education of Students with Mild Disabilities (6) Nature and characteristics of persons with mild handicaps and the educational strategies appropriate for these persons. Prereq: 310, 320, 422, and Admission to Teacher Education Program. Coreq: 420. F

420 Field Experience in Modified Programs (3) Practicum in teaching in modified programs: planning, developing, implementing, and evaluating modified programs. Prereq: 310, 320, Educational Curriculum and Instruction 422 and Admission to Teacher Education Program. Coreq: 420. Satisfactory/No Credit only. F

421 Elementary and Middle School Science and Social Studies Instruction (3) Methods and materials for teaching science and social studies. Development of functional relationships and individual entities of the two fields. Open to students with recent background in The Teaching of Elementary Science and/or Social Studies. Prereq: Admission to Teacher Education Program. F, S

422 Elementary and Middle School Teaching Methods I (6) Methods and materials (knowledge base) for teaching in the elementary and middle school, including course content and curriculum overview. Emphasis will be placed on subject matter, unit planning, daily planning, evaluation, etc., as well as language and concept development. Prereq: Admission to Teacher Education Program.
424 Studies in Elementary Education (1-3) Variable topics on teaching in Early Elementary (K-3), Middle Elementary (4-8), and Special Skills (K-8). Prereq: Admission to Teacher Education Program and permission of instructor. May be repeated. Maximum 8 hours. E.

429 Language Arts/Reading Instruction in Elementary and Middle Schools (3) Language and language development techniques, teaching of reading (listening-speaking), and aspects of reading (reading process readiness and writing). Not open to students who have had recent course in language arts methods. Prereq: Admission to Teacher Education Program. F, Sp.

430 Elementary and Middle School Developmental Reading Instruction (3) Word recognition (including phonics), comprehension, evaluation, and materials. Not open to students who have had recent course in reading methods. Prereq: Admission to Teacher Education Program, F, Sp.

431 Field Experience in Comprehensive Programs (3) On-site teaching experience with moderately and severely handicapped children and youth. Prereqs: 310, 320, 326, Educational Curriculum & Instruction 422 and Admission to Teacher Education Program. Coreq: 430. Satisfactory/No Credit only. Sp.

432 Psychology and Education of Students with Moderate/Severe Disabilities (6) Nature and characteristics of persons with moderate/severe disabilities and educational strategies appropriate for these persons. Prereq: 310, 320, 422 and Admission to Teacher Education Program. Sp.

434 Teaching Strategies and Issues in Social Studies Education (3) Goals, objectives, techniques, materials, evaluation; directed observation in public schools, preparation of teaching plans and materials; simulated teaching experiences. Prereq: Admission to Teacher Education Program.

456 Speech and Language Basis of Learning Disabilities in the Classroom (3) Normal communication development; understanding of speech and language impairments in school-age students; integration of oral/ written communication skills into curricula, especially for high incidence special education students. Sp.

470 Psychology of the Exceptional Child (3) General characteristics and educational needs of exceptional children. Implications of developmental variations for functioning as adults. Enrollment limited to non-education majors.

471 Internship I: Elementary (3-8) Methods and theories of teaching. Internship is completed in local public schools. Application for internship should be made upon admission to the Teacher Education Program. Prereq: 410 and Admission to Teacher Education Program, Satisfactory/No Credit only. F.

472 Internship II: Elementary (3-6) Demonstration of professional competence in planning, instruction, and classroom management. Internship is completed in local public schools. Prereq: 471 and Admission to Teacher Education Program. Satisfactory/No Credit only. Sp.

473 Student Teaching in the Elementary School (3-10) Semester equivalent to Educational Curriculum and Instruction 4810 or 4820. Intended for students in the four-year program or equivalent. Not to be substituted for Educational Curriculum and Instruction 4711. Internship I or 472 Internship II. Prereq: Admission to Teacher Education Program, permission of Mentoring Team, and 203 (1). Satisfactory/No Credit only.

492 Directed Independent Study (1-3) Tutorial and specialized area. Prereq: consent of instructor. May be repeated. Maximum 15 hours. Satisfactory/No Credit grading or letter grade.

493 Independent Study (1-3) Topics to be assigned. May be repeated. Maximum 12 hours. E.

494 Supervised Readings (1-3) Topics to be assigned. May be repeated. Maximum 12 hours. E.

495 Special Topics (1-3) Topics to be assigned. May be repeated. Maximum 12 hours.

HOTEL AND RESTAURANT ADMINISTRATION (551)

120 Introduction to Hotel and Restaurant Administration (2) History and place of industry in national economy; basic operating systems, organization structure; problems in the hospitality complex.

126 Front Office Management (3) Front office procedures within context of overall operation of the hotel/motel; includes reservation systems, equipment, accounting processes, automobile procedures, public relations, and management.

220 FoodService Systems Administration (3) Management concepts, processes, resources in foodservice systems; decision-making and problem solving principles.

320 Quantity Food Procurement, Production and Service (3) Principles of selecting, procuring, storing, producing and serving foods in volume. Prereq: 120, 220, NTR 100 or 107, NTR 101 Micro 210 or PH 215; permission of the program or consent of the instructor. Coreq: 321 or 322.

321 Quantity Food Procurement, Production and Service Laboratory (1) Application of principles in determining needs, procuring, storing, producing and serving foods in volume. Prereq: 120, 220, NTR 100 or 107, NTR 101 Micro 210 or PH 215; progression into HRA program or consent of the instructor. Coreq: 320.

322 Quantity Food Procurement, Production and Service Observation (1) Application of principles in determining needs, procuring, storing, producing and serving foods in volume as they apply in the hotel/motel industry. Prereq: 120, 220, NTR 100 or 107, NTR 101 Micro 210 or PH 215; progression into HRA program or consent of the instructor.

325 Food and Lodging Cost Control (3) Budget, cost analysis; computer, financial statement use in decision making in lodging and foodservice systems. Prereq: 320, 321 or 322; Accounting 202 or consent of instructor.

420 Field Experience in Hotel and Restaurant Administration (6) Supervision and educational experiences in selected tourism, food and lodging operations followed by a two-day seminar. Students enrolled in this course may not enroll in Management Systems. Prereq: 320, 321 or 322; Accounting 202; Economics 201; Marketing 301; Business Law 301; 100 hours of verifiable work experience. Satisfactory/No Credit only.

422 Food and Lodging Personnel Development (3) Training programs, personnel management procedures and policies involving human resource analysis for lodging and foodservice systems. Prereq: 320, 321 or 322; or consent of the instructor.

423 Hospitality Sales and Marketing (3) Strategic marketing for lodging and restaurant organizations; includes property/product, market, and competition analysis; promotion, pricing, planning, internal and external sales and promotion techniques. Prereq: 320; Marketing 301; progression into HRA program or consent of the instructor.

424 Advanced Hotel and Restaurant Administration (3) Integration of information management /informational techniques and applications to hotel and restaurant business policy, strategy formulation, implementation, and evaluation. Prereq: 320, 321 or 322; Accounting 202; Economics 201; Marketing 301; Business Law 301; 100 hours of verifiable work experience.

425 Hospitality Law (3) Legal rights and responsibilities of staff, management, and hotels. Prereq: 320, 321, or 322; Bus. Law 301 or consent of the instructor.

426 Convention Management (3) Scope and segments of convention management including requirements meeting individual needs; methods and techniques for outstanding service. Prereq: 320, 321, or 322 of the instructor.

445 Field Experience in Community-Based Programs (1-3) May be repeated. Maximum 3 hours. Prereq: Consent of instructor.

450 Directed Study: Hotel and Restaurant Administration (1-3) Study under supervision of faculty. Prereq: Junior or Senior standing, consent of the instructor. Satisfactory/No Credit only.

497 Honors: Hotel and Restaurant Administration (1-3) Senior project. Prereq: Senior standing, consent of the instructor.

HUMAN ECOLOGY (520)

100 Special Topics in Human Ecology (1-3) Topics variable. Prereq: Consent of the instructor. Satisfactory/No Credit only. May be repeated. Maximum 3 credits.

201 Field Experience in Family Life School-Based Programs (1-3) May be repeated. Maximum 3 hours. Satisfactory/No Credit only.

210 Microcomputer Applications (3) Introduction to microcomputer use and five software programs: operating systems, word processing systems, data base systems, spreadsheet programs and graphics programs; design of a management information system; spreadsheet, word processing, and database. Prereq: Declared major in College of Human Ecology.

325 Strategies for Facilitating Learning (4) Methods and techniques for facilitating learning, developing instruction plans, and delivering presentations. Includes field experiences. Prereq: CS 205.

350 Special Topics: Human Ecology (1-3) Study in a selected professional area within the College of Human Ecology. Topics vary. May be repeated. Maximum of 6 credit hours.


445 Field Experience in Community-Based Programs (1-15) Placement in Home Economics-related programs or organizations. Includes seminars. May be repeated. Maximum 15 hours. Prereq: Consent of instructor. Satisfactory/No Credit only.

497 Directed Study: Human Ecology (1-3) Topic arranged by individual student under supervision of faculty. May be repeated with different topics. Maximum 6 hours. Prereq: Junior or Senior standing in a major in the College of Human Ecology and consent of instructor.

497 Honors: Human Ecology (3-6) Topics or issues offered in areas within Human Ecology that are designed to meet particular interests of the student. Prereq: Consent of instructor. May be repeated. Maximum 6 hours.

HUMAN RESOURCE DEVELOPMENT (529)

161 Graphic Communications (3) Drafting as a means of communication in technology. Orthographic and multiview drawing, conventional practices, pictorial techniques and applications, sheet metal development and auxiliary wire drawing. Sketching, dimensioning, board work, CAD, F, P.

183 Power and Energy Systems (3) Automotive technology and internal combustion engines. Includes various prime movers, methods of utilization, distribution, and transmission of power. Engine tune up and overhaul and small engine maintenance and repair is stressed through experimental and applied laboratory experiences. F.

185 Woods Technology (3) Processes, tools, equipment, and products of the woodworking industry. Importance of safety and using hand tools and basic machinery. F.

186 Metals Technology (3) Processes, equipment, materials and products of metal working industries. Processes in machines, foundry, forging, heat treatment, sheet metal and fabrication. F.

201 Field Experience in Vocational Technical Education (1) Field experience in public school programs in vocational education. May be repeated. Maximum 3 hours. Satisfactory/No Credit only.

230 Typewriting and Shorthand Proficiency (3) Proficiency credit for students planning to certify in business education and office technology who have typewriting and/or shorthand courses. Prereq: Department approval. E.


268 Basic Electricity/Electronics (3) Operation and characteristics of electrical systems and devices, in-
466 Course Construction in Technology Education (3) Selection and structuring of student learning experience; planning, instructional objectives, project/product selection, assignments and evaluation. Prereq: Admission to Teacher Education Program. E

470 Training for Human Resource Development (3) Organization and management of training, including roles and functions performed and the needs, costs, benefits, and productivity of training systems. F

471 Principles of Supervision (3) Problems of motivation, communication, interpersonal relationships, and leadership. Sp

479 Internship in Human Resource Development (5-10) Assessing, planning, implementing, and evaluating the effectiveness of human resource development programs in an industrial setting. May be repeated to a maximum of 10 semester hours. Satisfactory/No Credit only. E

481 Student Teaching: Grades 7-12 and Adults (10) Full-time experience in classroom and laboratory teaching and related responsibilities under the direct supervision of a master teacher in the content area. Satisfactory/No Credit only. Prereq: Admission to Teacher Education Program. E

HUMAN SERVICES (532)

220 Introduction to Human Services (3) Focus on related societal values and contemporary issues in human services. Emphasis on the various professions, settings, and roles of human service practitioners. May be repeated to a maximum of 9 credits. E

330 Thinking About People (3) Development of thoughtful, informed, and empathetic attitudes toward human beings—those providing services as well as those receiving service. Prereq: Progression to the major. E

380 Human Services Methodologies I (3) Basic helping skills essential to the effective delivery of human services. Prereq: Progression to the major or consent of instructor. F

380 Information Interpretation and Assessment (3) Information gathering and assessment for human services are examined in depth in relation to human services practice. Formulating questions; identifying relevant data, using related resources, interpreting information and applying this information in a practical setting. Prereq: Progression to the major. Sp

420 Human Services Methodologies II (3) Includes reality therapy, behavior modification, family systems, client-centered and rational emotive therapy, discussion and role playing of methods and skills that will be used during the field experience. Prereq: Progression to the major. 220, 330. Coreq: 440. Satisfactory/No Credit only. F

430 Working Within The System (3) Capstone Experiences. Content within which the need for human services arises and analysis of the process through which such services are provided. Prereq: Progression to the major; 330; senior standing or consent of instructor. Sp Writing emphasis course.

440 Human Services Field Work (6) Practical field experiences in appropriately organized and directed human services settings. Develops specific helping skills; involvement in roles and function of social services, and provides direct services in a supervised learning situation. For majors only. Prereq: Progression to the major or consent of instructor. Coreq: 420. Satisfactory/No Credit only. F

441 Human Services Field Work II (6) Practical field experiences in appropriately organized and directed human services settings. Develops specific helping skills; involvement in roles and function of social services, and provides direct services in a supervised learning situation. For majors only. Prereq: Progression to the major; 380, 420, 440. Satisfactory/No Credit only. Sp

450 Special Topics in Human Services (3) Issues, methods, values, and trends with implications for helping practitioners, such as social justice, legal and ethical issues, and self-awareness education. May be repeated. Maximum 9 hours.

491 Foreign Study (1-15)

492 Off-Campus Study (1-15)

493 Independent Study (1-15)
INCLUSIVE EARLY CHILDHOOD EDUCATION (542)

410 Pre-Internship Seminar (1) Objectives and policies of the internship program. Must be completed the term immediately preceding the internship. Prereq: Admission to Teacher Education Program. Satisfactory/No Credit grading only. F

445 Early Childhood Education: Program Development and Teaching in Kindergarten (3) Curriculum planning, classroom organization and management practices for teaching young children; relationship of kindergarten to total elementary school. Prereq: Admission to Teacher Education Program. E

454 Education of the Gifted and Talented Children (3) Psychometric and behavioral studies of giftedness. Analysis of past and present practices in reference to curriculum and program implementation. Prereq: Admission to Teacher Education Program. Sp

471 Internship I: Special Education (3-15) Testing methods and theories of teaching. Internship is complete when a child begins a full-time job in a children's service facility. Application for internship should be made upon admission to the Teacher Education Program. Satisfactory/No Credit grading only. F

493 Independent Study (1-15) Topics to be assigned. May be repeated. Maximum 12 hours. E

495 Special Topics (1-3) Topics to be assigned. May be repeated. Maximum 12 hours. E

INFORMATION SCIENCES (560)

101 Information Foundations (3) Nature of information sources, value, creation, organizing principles, transfer, uses in society. Issues: ethics, privacy, copyright, preservation, national information policy, equity of access. Information oriented careers. Undergraduate credit only. F

102 Technologies for Information Retrieval (3) Principles, selection, and use of computer-based information management applications; software identification and task appropriate uses; telecommunications, utilities, and memory management systems; multiple operating systems; application development. Prereq: Information Foundations. Undergraduate credit only. E

104 Information Seeking: Resources and Strategies (3) Information search of print and electronic resources; decision-making; emphasis on planning, executing, and evaluating information searches. Focus on topic of student's major. Undergraduate credit only. E

330 Books and Related Materials for Children (3) Materials for children in leisure time or classroom activities; criteria for selecting books, magazines, recordings, films and related materials; storytelling and other devices for engaging young readers. Undergraduate Credit only. E

350 Information Consumer (3) Information in society, information economy, knowledge/learning/society; publishing and information providers: hosts, bulletin boards, nets; information society, science fraud, gatekeeping concepts; understanding systems; environmental scanning; information consumption techniques. Undergraduate credit only. F

490 Information Environment (3) Generation, production, and use of information. Roles of information in society, information seeking and use behaviors, information industry, economy, information products and services, technological and organizational change, information professions, and issues. E, Su-A

INTERDISCIPLINARY PROGRAMS (581)

100 Selected Topics (1-3) May be repeated. Maximum credit: 6 hours. F

400 Selected Interdisciplinary Topics (1-12) Acceptable for major or minor credit in any Interdisciplinary Program with the consent of the Director of Interdisciplinary Programs and the chairperson. May be repeated for credit, maximum of 12 hours. Letter grade or S/NC grading. E

491 Foreign Study (1-15) Registration by permission of the Director of Interdisciplinary Studies. E

492 Off-Campus Study (1-15) Registration by permission of the Director of Interdisciplinary Studies. E

493 Independent Study (1-15) Registration by permission of the Director of Interdisciplinary Studies. E

INTERIOR DESIGN (582)

140 Introduction to Interior Design (2) Orientiation to the profession; relationship to allied fields; contemporary developments; philosophical approaches. Open only to majors in interior design and architecture. E

150 Visual Studies (4) Classification and properties of two and three-dimensional objects; organization: design principles; visual and spatial elements within simple and complex visual systems; role of movement in experiencing scale and volume in space. One hour lecture and three hours studio. Open only to majors in interior design and architecture. Coreq: 140. E

200 Human-Environment Systems (3) Role of culture in defining environment, physical, social and conceptual aspects of human-environment systems; impact of environment on human behavior, feelings and values; mutual-cultural behaviors of environment-systems. (Same as Urban Studies 200.) E


250 Fundamentals of Interior Design II (4) Problem solving, spatial organization of micro environments, increasingly larger scale; communication of total design solution through visual and oral presentation techniques; emphasis on the use of color. One hour lecture and three hour studio. Prereq: or Coreq: 240. Art 295. E

260 Materials and Resources for Interiors (2) The development and application of materials and resources used in interior architectural spaces. Prereq: RCS 120. E

280 Micro-Computers for Interior Design (3) Introduction to computer-aided design software, desktop publishing, database and other software applications in various aspects of project design and management including specifications, estimating, designing, estimating, design requirements. Prereq: 200, 280, 440, or consent of instructor. E

300 Human-Environment Systems (3) Role of culture in defining environment, physical, social and conceptual aspects of human-environment systems; impact of environment on human behavior, feelings and values; mutual-cultural behaviors of environment-systems. (Same as Urban Studies 200.) E

395 Lighting for Interior Designers (3) Application of design criteria, proximity analysis and information management techniques. Two hour lecture and three hour studio. Prereq: or Coreq: 140, 150, 280, Arch 172, Math 202. E

INTERIOR DESIGN SYNTHESIS (585)

350 Intermediate Interior Design I (3) Studio problems of intermediate complexity; integrates and extends previous experiences utilizing systematic design methodologies. Two hour lecture and three hour studio. Prereq: 140 or consent of instructor. E

360 Lighting for Interior Designers (3) Application of principles and elements of lighting and wiring to design of visual environment. Prereq: or Coreq: 350, Physics 122 or consent of instructor. E

400 Intermediate Interior Design II (5) Comprehensive studio problems of advanced complexity; integrates and extends previous experiences utilizing systematic design methodologies. Two hour lecture and three hour studio. Prereq: 440 or consent of instructor. E

417 Honors: Interior Design (1-4) Advanced research in interior design problems for juniors or seniors. May be repeated. Maximum 8 hours. Consent of instructor. E

420 Practicum for Interior Design (12) Supervised experience in a professional design firm; business practices, project management and design philosophy. Prereq: 350 and consent of instructor. Coreq: Fourth year standing in Interior Design. E

430 Computer-Aided Design (3) Interaction between computer-aided design process, database, spreadsheets, software, cost estimating, construction drawings related to space planning. One hour lecture and two hour studio. Prereq: or Coreq: 350, 400, or consent of instructor. E

440 Advanced Interior Design I (5) Non-residential studio problems of advanced complexity; integrates and extends previous experiences utilizing systematic design methodologies. Two hour lecture and three hour studio. Prereq: 350, Coreq: 400, or consent of instructor. E

450 Advanced Interior Design II (5) Comprehensive studio problems of advanced complexity; integrates and extends previous experiences utilizing systematic design methodologies. Two hour lecture and three hour studio. Prereq: 440 or consent of instructor. E

460 Lighting for Interior Designers (3) Application of principles and elements of lighting and wiring to design of visual environment. Prereq: or Coreq: 350, Physics 122 or consent of instructor. E

470 History of the Contemporary Interior Architect (2) Interior architecture, furniture, design philosophies, eighteenth century to present. Survey of cultural developments, Europe and America. Design as influenced by movements in the fine arts, technological advancements, and change in cultural context. Prereq: (370 or consent of instructor. E

475 History of American Interior Architecture (3) Historical developments in interior architecture and decorative arts within cultural context; colonial era through nineteenth century. Prereq: 370 or consent of instructor. E

480 Furniture Design (4) Human factors data applied to design of body support, task support, storage and systems, construction drawings and detailed models; advanced woodwork design; materials and manufacturing processes. One hour lecture and two hour studio. Coreq: Fourth year standing in interior design program or consent of instructor. E

485 Interior Design Synthesis (5) Advanced integrative design research experience. Prereq: 450 or consent of instructor. E

491 International Study (1-15) Individual or group studio or study abroad; academic research, field investigation, or studio experiences. May be substituted for 420 in student's professional curriculum. Determination of credit based on particular international experience. Prereq: 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. Prereq: Consent of instructor. E
ITALIAN (584)

111-112 Elementary Italian (3, 3) Introduction to Italian. Must be taken in sequence. Language Laboratory required. F, Sp

199 Italian Language and World Business (3) This course will examine the importance of foreign trade at the local, national, and international levels. An interdisciplinary team of faculty from the colleges of Business and Arts and Sciences will provide an overview of the value of language study and international cultural awareness, in world business. Restricted to students majoring in Language and World Business. See the Director for further information. F

211-212 Intermediate Italian (3, 3) Sequence stresses reading, writing, listening and speaking Italian to prepare for college-level courses in the language. Must be taken in sequence. Language Laboratory required. F, Sp

311-312 History of Italian Literature (3, 3) Chronicological view of Italian literature in relation to the specific historical developments that have influenced it. Prereq: 212 or equivalent.

314 Highlights of Italian Civilization (3) Survey of Italian civilization with special attention to major social, political and cultural achievements. Prereq: 212 or consent of instructor.

341-342 Intermediate Grammar, Composition and Conversation (3, 3) Grammatical analysis of Italian prose; review of grammatical principles and their application in translation from English to Italian, both written and oral; exercises in composition. Prereq: 212 or equivalent.

401 Dante and Medieval Culture (3) Introduction to the significance of this great Italian writer. Prereq: 212 or consent of instructor. (Same as Medieval Studies 401.)

402 Petrarca and Boccaccio (3) Prereq: 212 or consent of instructor. (Same as Medieval Studies 402.)

403-404 Literature of the Rinascimento (3, 3) From Poggio to Tasso, the Quattrocento and the Cinquecento. Prereq: 212 or consent of instructor.

405 Modern Italian Poetry (3) Prereq: 212 or consent of instructor.

406 The Modern Italian Novel (3) Prereq: 212 or consent of instructor.

409 Directed Readings (3)

410 Italian Theatre (3) Survey of Italian theatre from Renaissance to present. Prereq: 212 or consent of instructor.

421 Topics in Italian Literature and Cinema (3) Examination of Italian literature and cinema from 1930 to the present focusing on literary works translated into English and adapted into film. Objectives of the course are to investigate the relationship between literature and cinema and to achieve a greater understanding of Italian culture since 1930. Films will be shown in Italian with English subtitles. Prereq: 212 or equivalent. Maximum of 6 hours. (Same as Cinema Studies 421.)

490 Internship (1-15) Career-related experiences in the United States or abroad with permission of the Language & World Business Director. For Language & World Business majors only. Satisfactory/No Credit only.

491 Foreign Study (1-15)

JOURNALISM (594)

201 Publicity and Public Relations (3) Principles and practice of writing for mass media. Public information campaigns for organizations and institutions. Not available to majors in the College of Communications. Prereq: English 102. F, Sp

203 Editing (3) Methods and practice in judging news, editing copy, writing headlines and designing newspapers and magazines. Emphasis on prose writing and editing. Prereq: 212 or equivalent.

270 Public Relations Principles (3) Theories and principles of public relations. Overview of public relations in management of business, government, institutions and organizations. Brief case studies and public relations projects. F, Sp

290 Photographic Journalism (3) Principles and practice of photography as a creative tool of communication. Basic camera technique, darkroom work; historical and contemporary photographic journalism. Lecture and laboratory. E

310 Feature Writing (3) Skills of journalism for writing feature articles for newspapers, magazines and company publications. Critiquing of students' work in workshops, and writing feature class pieces as assigned. Prereq: typing proficiency.


370 Public Relations Cases (3) Oral and written analysis of current and classic case studies in public relations. Ethics, professional organizations, publications, research, and forms of public relations. Methods of communication and persuasion. Prereq: 270. F, Sp

390 Communications Graphics (3) Principles and practice of the visual aspects of communications. Emphasis on graphic design, typography, illustration and photography, printing and production techniques and publication design. Lecture and laboratory. Prereq: 201, or Communications 200, or consent of instructor.

403 International Communications (3) Development and operations of world mass communications channels and agencies. Comparative analysis of media, media practices, flow of news throughout the world. Print and broadcast systems studies in terms of relevant social, political, economic, and cultural factors. Relation of communication practices to international affairs and understanding.

412 Opinion Writing (3) Analysis of editorial positions, practices and pages. Writing editorials and columns for newspapers and magazine publications. Emphasis upon the visual elements of writing and the mechanics of the written page. Prereq: 203 or consent of instructor.

414 Magazine Writing (3) Techniques of writing in-depth articles for mass circulation and specialized magazines. Coverage of a variety of topics, with special attention to problems in areas such as business, science, agriculture, the humanities. Prereq: 203 or consent of instructor.

416 Issues in Journalism (3) Topics vary. May be repeated. Maximum credit 6 hours. Prereq: Consent of instructor.

420 Print Media Management (3) Current business practice among print media, especially newspapers, magazines, periodicals, and broadcasting. Emphasis on practice of writing for mass media. Prereq: 212 or consent of instructor.

433 Advanced Editing (3) Primary focus is on sensitivity to language and editing skills. Includes headline writing, layout, and production. Prereq: 203.

444 Journalism as Literature (3) Study of writers from the 17th century to the modern era whose works have endured as both journalism and literature. An emerging genre called literary journalism will be examined as a means of cultural exploration with personal narrative style. Prereq: Consent of instructor.

450 Writing about Science, Technology, and Medicine (3) Writing workshop in which students analyze examples of successful science writing and write a series of articles for the general public based on scientific journals, news conferences, technical meetings, and interviews. Prereq: Consent of instructor. F, Sp

451 Environmental Reporting (3) Writing for news media on the environment. Topics include air and water quality, pollution, acid rain, climate change, the environment, and waste disposal. Students will practice writing articles for newspapers, magazines, websites, and blogs. Prereq: 203 or consent of instructor.

455 Issues in Science Communications (3) May be repeated. Topics vary. Prereq: Consent of instructor.

456 Science Writing as Literature (3) Survey of important science writing for the general public across the spectrum of science, engineering, and medicine. Works by authors such as Richard J. Schwartz and Richard Selzer will be analyzed for literary qualities in a quest to understand why some science writing succeeds. Prereq: Consent of instructor.

460 Radio Communications History (3) Development of the mass media and the role of mass communications in American history. Newspapers, radio, television and magazines. F

470 Public Relations Campaigns (3) Research, planning and communication and evaluation of public relations campaigns. Oral and written presentation of a public relations project from inception to completion. Extensive out-of-class work. Prereq: 270. E

480 Journalism in the High School (3) Functions and methods of high school publications. Students present content of publications, copy, layout, photography, printing, advertising and business. Planning course outlines and advertising for journalism. Prereq: 481.

490 Advanced Photographic Journalism (3) Advanced principles and methods of black-and-white photography. Introduction to color photography. News and feature photography, photo essays. Prereq: 290, or consent of instructor. Sp

492 Field Experience (1-2) Approved internships and other supervised practice in journalism and public relations. May be repeated for a maximum of 4 credit hours. Prereq: Senior standing and consent of instructor. Satisfactory/No Credit grading only. E

493 Independent Study (3) May be repeated for a maximum of 6 hours. Prereq: Consent of instructor.

LANGUAGE, COMMUNICATIONS AND HUMANITIES EDUCATION (598)

141 Efficient Reading and Study Skills (2) Improvement of reading comprehension and rate, intensive vocabulary enrichment, study skills and general content-area subjects. Satisfactory/No Credit only. F, Sp

203 Field Study in Education (1-3) Problems of persons in active service in the field. Includes methods of teaching, curriculum materials, school-community relationships and school organizations. May be repeated. Maximum 8 hours. E

453 Adolescent Literature (3) Literature written or appropriate for adolescents.

455 Teaching of Foreign Language, Grades 7-12 (3) Instructional methods, lesson planning, peer-teaching, materials for teaching Foreign Language and culture, evaluation techniques. Required for certification in modern foreign languages and Latin. Prereq: Completion or near completion of foreign language hours for certification and admission to Teacher Education Program. F

456 Teaching Speech and Drama, Grades 7-12 (3) Purposes, techniques, materials and evaluation for teaching Speech and Drama in secondary schools. Required for certification in Speech. Prereq: Admission to Teacher Education Program. F

459 Teaching English in the Secondary School (3) Techniques of teaching composition, language, literature. Prereq: Admission to Teacher Education Program. F

460 Teaching Reading and Literature in the Secondary School (3) Teaching basic reading skills and literature. Sp

461 Developing Reading Skills in Content Fields (3) Teaching reading and study skills in content areas of the school program. Extensive assessment of textbooks. Emphasis on middle school and high school. F, Sp, Su

481 Internship I: Grades 7-12 (3, 6) Methods and theories of teaching. Internship is completed in the local public schools. Application for internship should be made upon admission to the Teacher Education Program. Prereq: 410 and admission to Teacher Education Program. Satisfactory/No Credit only. F

482 Internship II: Grades 7-12 (3, 6) Observation of professional competence in planning, instruction, and classroom management. Internship is completed in local public schools. Prereq: 481 and admission to Teacher Education Program. Satisfactory/No Credit only. Sp

483 Independent Study (1-3) Topics to be assigned. May be repeated. Maximum 12 hours. E

484 Supervised Readings (1-3) Topics to be assigned. May be repeated. Maximum 12 hours. E
LATIN (257)
111-112 Beginning Latin (3.3) Must be taken in sequence. Not available to students eligible for Latin 150.
150 Latin Transition (3) This course is designed to prepare students for enrollment in Latin 251. Prereq: Two years of high school Latin and a score on the Latin placement exam below that required for admission to Latin 251. Since 150 is a review of elementary Latin, students who receive credit in this course may not also receive credit for any other level Latin course and therefore also forfeit the six hours of elementary language credit awarded through placement examination.
231 Intermediate Latin: Grammar and Reading (3) Prereq: 112 or 150 or placement through the Latin placement examination.
252 Intermediate Latin: Vergili's Aeneid (3) Prereq: 251 or equivalent.
351 Cicero and Sallust (3) Prereq: 252 or equivalent.
352 Roman Lyric Poetry (3) Poetry of Catullus, Horace, and the elegists. Prereq: 252 or equivalent.
414 Cicero and Techniques of Latin Prose Composition (3) For advanced students in Latin. Practice in production of Cicero's model. Prereq: 351-352 or consent of instructor.
431-432 Selected Readings from Latin Literature (3.3) For advanced students in Latin. Oratory, historical writings and poetry of ancient Rome, in the original Latin. May be repeated for credit. Maximum 9 hours. Prereq: 351-352 or consent of instructor.
435 Medieval Latin (3) Selected readings from the Latin prose and poetry of medieval Europe. Prereq: Consent of instructor.

LATIN-AMERICAN STUDIES (600)
251-252 Introduction to Latin American Studies (3.3) (Same as History 251-252).
311 Aspects of Luso Brazilian Literature (3) (Same as Portuguese 311).
313 Peoples and Cultures of Mesoamerica (3) (Same as Anthropology 313).
319 Caribbean Cultures and Societies (3) (Same as Anthropology 319 and African and African-American Studies 319).
336 Aspects of Spanish American Literature (3) (Same as Spanish 336).
355 Latin American Government and Politics I (3) (Same as Political Science 355).
360 History of Latin America (3) (Same as History 360).
361 History of Latin America (3) (Same as History 361).
372 Geography of Middle America (3) (Same as Geography 372).
373 Geography of South America (3) (Same as Geography 373).
401 Cultural Plurality and Institutional Changes in Latin America (3) (Same as Spanish 401).
402 Latin American Studies Seminar (3) (Same as Spanish 402).
431 Directed Readings in Brazilian and Portuguese Literature (3) (Same as Portuguese 431).
432 Directed Readings in Brazilian and Portuguese Literature (3) (Same as Portuguese 432).
455 Latin American Government and Politics II (3) (Same as Political Science 455).
460 History of Brazil (3) (Same as History 460).
461 Cuban Revolution in Historical Perspective (3) (Same as History 461).
462 History of Mexico (3) (Same as History 462).
463 Modern Latin American History in Film (3) (Same as History 463).
471 Latin American Civilization (3) (Same as Spanish 471).
473-474 Survey of Spanish American Literature (3) (Same as Spanish 473-474).
475 Studies in Latin American History (3) (Same as History 475).
479 Social Protest Literature of Latin America (3) (Same as Spanish 479).
491 Foreign Study (1-15)
492 Off-Campus Study (1-15)
493 Independent Study (1-15)

LINGUISTICS (623)
200 Language, Linguistics and Society (3) Introduction to linguistics with focus on language development and use of language by individuals and groups. Prereq: Completion of Freshman English or equivalent.
371 Foundations of the English Language (3) (Same as English 371).
372 The Structure of Modern English (3) (Same as English 372).
400 Topics in Linguistics (3) Content varies. May be repeated. Maximum 6 hours.
411 Linguistic Anthropology (3) (Same as Anthropology 411).
420 The Development of Historical Linguistics as a Science (3) Development of the scientific understanding of language change. Emergence of the Neogrammarian paradigm from 19th century intellectual trends. Impact of synchronic, descriptive, structural and transformational generative linguistics on contemporary diachronic theory. Prereq: 6 hours of courses required for Linguistics concentration or consent of instructor.
425 Introduction to Descriptive Linguistics (3) (Same as French 425, German 425, Russian 425, and Spanish 425).
426 Methods of Historical Linguistics (3) (Same as French 426, German 426, Russian 426, and Spanish 426).
429 Romance Linguistics (3) (Same as French 429 and Spanish 429).
430 The Development of Synchronic Linguistics as a Science (3) Development of the first synchronic paradigm of linguistics. Impact of social sciences on American linguistics. Prereq: Consent of instructor.
435 Structure of the German Language (3) (Same as German 435).
436 History of the German Language (3) (Same as German 436).
471 Sociolinguistics (3) (Same as English 471 and Sociology 471).
472 American English (3) (Same as English 472).
474 Teaching English as a Second or Foreign Language I (3) (Same as English 474).
475 Teaching English as a Second or Foreign Language II (3) (Same as English 475).
485 Special Topics in Language (3) (Same as English 485).
491 Foreign Study (1-15)
492 Off-Campus Study (1-15)
493 Independent Study (1-15)

LOGISTICS AND TRANSPORTATION (624)
301 Introduction to Logistics (3) Business logistics as a functional area within the firm and as a strategic element of the marketing mix. Role of materials management and physical distribution, and activities such as customer service, order processing and information flow, transportation, warehousing, purchasing, inventory, and system design and organization.
302 Introduction to Transportation (3) Transportation and distribution as a vital element of national commerce and social structure. U.S. transportation system. Society's demands for mobility and policies of public and private sectors to meet those demands. Prereq: Econometrics 201.
400 Special Topic in Logistics and Transportation (3-6) Seminar in current problem area in logistics and transportation. Topic announced prior to offering. May be repeated once for additional credit provided topic is different. Maximum 6 hours. Prereq: Consent of instructor.
401 Materials and Traffic Management (3) Planning and management of logistics activities including purchasing, transportation, storage and control, and supply chain. Materials management tools and organizational structures for various industries. Prereq: 301-302.
402 Transportation Operations and Cost Management (3) Freight carrier operations with the development of carrier costs and their control considered by each mode individually and in coordination with each other. Prereq: 301-302.
450 Computer Information Systems Analysis and Design (3) Design of operational/logistical information systems for organizations based on evolving microcomputer hardware networks, data base design theory, procedural and standard languages software, analysis of both operational and decision support requirements. Prereq: Management 303.
461 Seminar in Logistics Strategy (3) Senior seminar in development of strategy in logistics management. Major writing requirement. Prereq: 301, 302 and senior standing.
462 Seminar in Transportation Strategy (3) Senior seminar in development of strategy in transportation management. Major writing requirement. Prereq: 301, 302 and senior standing.
493 Independent Study (1-6) Directed research on subject of mutual interest to student and staff member. May be repeated. Maximum 6 credit hours. Prereq: Consent of instructor.
497 Honors: Executive-in-Residence in Transportation and Logistics (3) Student interaction with top-level logistics and transportation executives. Focus on the strategic decision-making process. Prereq. Consent of instructor.

MANAGEMENT (625)
203 Management Information Systems (3) Management information concepts. Organizational information needs, management decisions relating to technology and systems design. Data base management systems and applications development software. Prereq: Computer Science 102.
301 Principles of General and Operations Management (3) Basic functions of general management and the concepts and techniques used in operations management, including lectures and discussion/problem solving sessions. Prereq: Statistics 201.
311 Labor Relations and Collective Bargaining (3) American labor history, structure and philosophy of contemporary unions, nature of collective bargaining, and dispute settlement. (Same as Economics 343).
321 Organizational Structure and Behavior (3) Behavioral processes in organizations; motivation, leadership, decision making, communication; behavioral consequences; group behavior, informal organizations, organizational structure, conflict, politics, change and development. Prereq: 301.
401 Business Strategy/Policy (3) Strategy and policy which affect the character and success of the total enterprise. Capstone course which integrates all func-
Economics 201, Statistics 201, and Marketing 301-310. jor writing requirement. Prereq: Accounting 201-202; combined into a framework for strategic decisions. Marketing Management (3) Institutions comprising the marketing system; principal environmental opportunities and constraints facing the marketing manager. Prereq: Accounting 201-202; Economics 201, and Statistics 201.


320 Marketing Research and Information Planning (3) Research process from its inception to implementation of the study's results. Students should be able to critically evaluate the merit of a research project as well as possess the ability to design a sound market research project. Major writing requirement. Prereq: Accounting 201-202; Economics 201, and Statistics 201.

400 Special Topics in Marketing (3) Topics of current interest in marketing. Topic announced prior to offering. May be repeated once for additional credit provided topic is different. Maximum 6 hours. Prereq: Accounting 201-202; Economics 201, Statistics 201, and Marketing 301.


431 Personnel Management (3) Theory, methods and issues pertaining to successful personnel management. Prereq: 301, senior standing.

432 Implementation and Evaluation of Personnel Programs (3) Methods of identifying, developing, implementing and evaluating various personnel programs. Prereq: 341, senior standing.

440 Organizational Psychology (3) (Same as Psychology 440.)

441 Operations Management II (3) Planning and control of operations systems. Aggregate planning, scheduling systems, materials management. Prereq: 341.

467 International Management (3) Factors significant to the manager in international business activities. Prereq: 301.

493 Independent Study (1-6) Directed research, reading, and special projects. Consent of instructor. May be repeated one time for credit.

MATHEMATICS (641)

100 Intermediate Algebra (3) First degree equations and inequalities, polynomials, rational expressions, exponents, logarithms, graphing, systems of equations and inequalities, functions, introduction to exponential and logarithmic functions. The course is designed to prepare students for enrollment in Mathematics 110, 115, 119, 130, 201, and 202. Course does not count toward the total number of hours required for graduation, nor do any mathematics requirement.

101 College Algebra (3) A review of algebraic functions, equations, and inequalities for students who satisfy the course prerequisites for 121 but whose placement tests indicate additional preparation is necessary. Students who receive a grade of C or better in any course numbered 121 or higher may subsequently receive credit for 121.

121 Calculus A (3) For students not planning to major in the physical sciences, engineering, mathematics, or computer science. Calculus of algebraic, exponential, and logarithmic functions, with applications. No student who has received credit for Math 141 or 151 with a grade of C or better may subsequently receive credit for 121. Prereq: Two years of algebra and one year of geometry in high school, plus satisfactory placement test scores of 119 or 130.

121 Calculus B (3) Sequel to 121, including elementary matrix algebra, multivariable calculus, and optimization. No student who has received credit for Math 141 or 151 may subsequently receive credit for 122. Prereq: Two years of algebra and one year of geometry in high school, plus satisfactory placement test scores of 119 or 130.

201 Structure of the Number System (3) Problem solving, sets and relations, numeration systems, integers, elementary number theory, rational numbers and decimals. Prereq: Two years of algebra and one year of geometry in high school and satisfactory placement test score.

202 Probability, Statistics, and Euclidean Geometry (3) In simultaneous linear equations and matrices, includes Gaussian elimination, determinants, vectors spaces, linear transformations, eigenvalues, and eigenvectors.

299 Honors: Calculus II (3) (3,3) Logic, sets, combinatorics and probability, functions and relations, induction and recursion, elementary number theory. Prereq: 141 or 151.


341 Calculus III (4) Calculus of functions in two or more dimensions. Includes solid analytic geometry, partial differentiation, multiple integration, and selected topics in vector calculus. Prereq: 142 or 148.

347 Honors: Calculus III (4) Prereq: 147-148 or invitation of the department.

351 Calculus I (3) First course in the algebra of matrices. Includes Gaussian elimination, determinants, vectors spaces, linear transformations, eigenvalues, and eigenvectors. Prereq: 141-142.

375 Honors: Matrix Algebra I (3) Prereq: 148 or invitation of the department.

383 Probability and Statistics (3) Discrete and continuous random variables; conditional probability, expectation, moment generating functions; law of large numbers, central limit theorem. Elements of statistical inference, estimation, and hypothesis testing. Prereq: 221, 241.

386 Analysis I (3) Introduction to the theory of the real number system, limits of sequences, and functions of a real variable. Prereq: 241 or 247, and 221.

393 Analytic Geometry and Calculus II (3) Introduction to abstract algebra. Includes arithmetic, integers, and polynomial rings. Prereq: 251 or 257, and 221.

371 Numberical Algorithms (I) Selection of algorithms and associated software for problems selected from one of the following, depending on the specific course, the students choose the course that suits them best, but at least squares data fitting, interpolation, numerical integration, numerical methods for ordinary differential equa-
457-486 Honors: Abstract Algebra I, II (3,3) Honors version of 455-466. Prereq: 351 or consent of instructor.

460 Geometry (3) Axiomatic and historical development of Euclidean and non-Euclidean geometries, including hyperbolic geometry, plane projective geometry, and the concept of a non-Euclidean metric. Prereq: 455 or consent of instructor.

461 Topology (3) Includes topology of line and plane, separation properties, completeness, connectedness, continuous functions, homeomorphisms, continuity, and the Jordan curve theorem. Prereq: 341 or consent of instructor.

462 Numerical Analysis (3) Introduction to numerical analysis, including error analysis, interpolation and approximation, numerical integration and differentiation, and solution of nonlinear equations. Prereq: 341 or consent of instructor.

463 Matrix Algebra II (3) Advanced topics in linear algebra, including vector spaces, linear transformations, and eigenvalues. Prereq: 251 or consent of instructor.

470 Orientation and Basic Techniques (1) For students preparing to enter the medical school, this course is designed to provide an introduction to medical terminology, ethics, and health team concept. Prereq: consent of instructor.

480 Principles of Supervision and Education in Medicine (1) Seminars in basic principles of management, supervision, and education theories and methods. Comprehensive examination covers entire course.

MEDIEVAL STUDIES (674)

201-202 Medieval Civilization (3) Introduction to the medieval period, with emphasis on European history, culture, and society. Prereq: 142 or 148.

221-222 Medieval History (3) Continuation of 201 and 202. Prereq: 201 and 221, or consent of instructor.

231-232 Medieval Literature (3) A study of major works of the medieval period, with emphasis on the development of the European literary tradition. Prereq: 142 or 148.

241-242 Medieval Studies (3) A study of major works of the medieval period, with emphasis on the development of the European literary tradition. Prereq: 142 or 148.

251-252 Medieval Philosophy (3) Study of major works of the medieval period, with emphasis on the development of the European literary tradition. Prereq: 142 or 148.

261-262 Medieval Civilization (3) Introduction to the medieval period, with emphasis on European history, culture, and society. Prereq: 142 or 148.

271-272 Medieval Literature (3) A study of major works of the medieval period, with emphasis on the development of the European literary tradition. Prereq: 142 or 148.

281-282 Medieval Studies (3) A study of major works of the medieval period, with emphasis on the development of the European literary tradition. Prereq: 142 or 148.

291-292 Medieval Civilization (3) Introduction to the medieval period, with emphasis on European history, culture, and society. Prereq: 142 or 148.

301-302 Medieval Literature (3) A study of major works of the medieval period, with emphasis on the development of the European literary tradition. Prereq: 142 or 148.

311-312 Medieval History (3) A study of major works of the medieval period, with emphasis on the development of the European literary tradition. Prereq: 142 or 148.

321-322 Medieval Philosophy (3) A study of major works of the medieval period, with emphasis on the development of the European literary tradition. Prereq: 142 or 148.

331-332 Medieval Studies (3) A study of major works of the medieval period, with emphasis on the development of the European literary tradition. Prereq: 142 or 148.

341-342 Medieval Civilization (3) Introduction to the medieval period, with emphasis on European history, culture, and society. Prereq: 142 or 148.

351-352 Medieval Literature (3) A study of major works of the medieval period, with emphasis on the development of the European literary tradition. Prereq: 142 or 148.

361-362 Medieval Studies (3) A study of major works of the medieval period, with emphasis on the development of the European literary tradition. Prereq: 142 or 148.

371-372 Medieval Civilization (3) Introduction to the medieval period, with emphasis on European history, culture, and society. Prereq: 142 or 148.

381-382 Medieval Literature (3) A study of major works of the medieval period, with emphasis on the development of the European literary tradition. Prereq: 142 or 148.

391-392 Medieval Studies (3) A study of major works of the medieval period, with emphasis on the development of the European literary tradition. Prereq: 142 or 148.

401-402 Medieval Civilization (3) Introduction to the medieval period, with emphasis on European history, culture, and society. Prereq: 142 or 148.

410-411 Medieval Literature (3) A study of major works of the medieval period, with emphasis on the development of the European literary tradition. Prereq: 142 or 148.

420-421 Medieval Studies (3) A study of major works of the medieval period, with emphasis on the development of the European literary tradition. Prereq: 142 or 148.
MILITARY SCIENCE (688)

110 Basic Military Science I (3) Formation and function of the American defense establishment and its relationship with American society, customs and traditions of the army, aspects of military physical fitness training, selected topics dealing with current world affairs, challenging the future. Adventure training skills lab introduces mountaineering, rifle marksmanship, and optional field training exercises. Prereq: United States citizen or sophomore standing. Students with higher standing may enroll with consent of instructor. Letter grade only. F, Sp

120 Basic Military Science II (3) Introduction of basic leadership theory, principles and skills, with emphasis on effective and ethical leadership. May present a military skills subject briefing. Skills taught include rifle marksmanship, small unit communications, and land navigation. Leadership and individual development training which includes rappelling, tactical formation, drill and ceremony and optional field exercises. Prereq: U.S. citizen, freshman or sophomore standing. Letter grade only, 2 hour class and 1 hour lab. Sp

130 Army Conditioning Program (1) Challenging instruction that concentrates on students' individual weaknesses in aerobic and anaerobic fitness, strength and conditioned endurance. Students also develop the ability to design and lead a fitness program. May be repeated. F, Sp

200 Basic Military Studies - Practicum (4) 240 hours of instruction and evaluation of leadership skills, group exercises and a leadership laboratory. Prereq: United States citizen; physically qualified; at least sophomores standing with a minimum of 3.0 grade point average. Letter grade only. F, Sp

210 Basic Officer Skills I (3) The study of American Military History from 1775 to present. Study includes the training record of military forces in peace and war and focuses on the history of military art, arms, battle history, technical studies, and the role of the armed forces with society. Labs teach mapping, physical training, drill and ceremony, and historical field trips. Prereq: U.S. citizen, freshman or sophomore standing. Letter grade only, 2 hour class and 1 hour lab. F

220 Basic Officer Skills II (3) Practical application of small unit operating techniques to include first aid, marksmanship and weapons familiarization, map reading and land navigation, drill and ceremony, processing of a nuclear, biological or chemical weapon. Prereq: U.S. citizen, minimum of 55 credit hours passed and have at least two years remaining to complete degree. Letter grade only. F

310 Advance Military Studies I (3) Discussion and practical application of the structure and functioning of the military team, land navigation, small unit patrolling, and physical fitness. Tactical and administrative roles in the military are discussed in depth and applied during leadership labs and field training. Prereq: United States citizen; minimum of 55 credit hours passed and have at least two years remaining to complete degree (undergraduate or graduate); physically qualified; cumulative GPA 2.00 or higher; legally qualified; 3 or 4 years of ROTC (or 110, 120, 210, 220 completion or 200 completion) or basic training completion. Letter grade only, 3 hours and 1 hour lab. Sp

320 Advance Military Studies II (4) Preparation of the future officer leadership of Army to excel at MS 400 Advanced Camp. Command and staff courses are based on lessons learned in the 310 and refine small unit leadership skills, map reading, military history, and written and oral communication skills. Includes case studies of adult leadership and exercises and a leadership laboratory. Prereq: 310. Letter grade only, 3 hours and 1 hour lab. Sp

400 Advanced Camp-Practicum (4) 240 contact hours of instruction and evaluation of leadership skills, group dynamics, communication skills, and decision making skills during the summer between the Junior and Senior year. Prereq: 310, 320. Letter grade only. Su

410 Command and Staff Functions (4) Command and staff functions include military politics, personnel, systems, efficiency reports, correspondence, training management, briefings, counseling, strategic force positioning, and individual voice communication. Prereq: 310 and 320, 400 or consent of instructor. Letter grade only, 3 hours and 1 hour lab. F

420 Military Ethics and Law (4) Military profession, ethical reasoning, staff operations, military briefings and leadership. Military professional, individual leadership, Law of Land Warfare. Prereq: 310, 320 and 400, or consent of instructor. Letter grade only. 3 hours and 1 hour lab. Sp

430 U.S. Military History, 1754 to the Present (3) (Same as History 451)

MUSIC EDUCATION (707)

200 Choral Laboratory (1) A laboratory choir designed to afford conducting opportunities for student conductors and to acquaint students with a variety of choral literature. May be repeated. A credit by any student except those registered for MUS ED 310 and 320. This class cannot be used to meet any academic requirements unless permission is granted by the Director of Choral Activities, the student's advisor, and the Department of Music Head.

210 Class Woodwind Methods (2) Structure, use, techniques of playing, care and repair of principal instruments in school instrumental organizations. Emphasis on techniques necessary for basic understanding and effective teaching of the instruments. Practical use of current instructional materials. Letter grade only, F, Sp

220 Class Brass Methods (2) Structure, use, techniques of playing, care and repair of principal instruments in school instrumental organizations. Emphasis on techniques necessary for basic understanding and effective teaching of the instruments. Practical use of current instructional materials. Letter grade only, F, Sp

230 Class Percussion Methods (2) Structure, use, techniques of playing, care and repair of principal instruments in school instrumental organizations. Emphasis on techniques necessary for basic understanding and effective teaching of the instruments. Practical use of current instructional materials. Letter grade only, F, Sp

240 Class String Methods (2) Structure, use, techniques of playing, care and repair of principal instruments in school instrumental organizations. Emphasis on techniques necessary for basic understanding and effective teaching of the instruments. Practical use of current instructional materials. Letter grade only, F, Sp

250 Functional Piano for Teachers (1) Practical piano skills for the general classroom teacher who does not have a keyboard instrument as the applied principal. Transposition, improvisation, reading open vocal scores, simple accompaniments, F major if once for credit. Letter grade only. F

260 Eurhythmics (1) Principles and practice of eurhythmics, as developed by EmiljJacques-Dalcroze. Prereq: Consent of instructor. May be repeated once for credit. Maximum 2 hours. Letter grade only, F

300 Music for Elementary Teachers (2) Singing, rhythmic activities, instrumental activities, music reading, and creative activities appropriate for the elementary grades. For elementary education majors only. Prereq: Admission to Teacher Education Program. Letter grade only. E

310 Conducting I (3) Basic skills of conducting: baton, time beating of traditional patterns, preparatory beat, cut-offs, cueing. Development of the left hand, form, subdividing. Mechanics of full score. Video tapes of great conductors. Conducting "live" groups. Videotapes of each student conductor. Prereq: Two years of music theory or consent of instructor and admission to Teacher Education Program. Letter grade only, F

320 Conducting II (3) Developing advanced baton technique. Multiple rhythms, modern beat patterns and their variations. Studying, analyzing and interpretation of the full score. Achieving complete physical control. Rehearsal techniques. Conducting "live" groups in advanced works. Video tapes of all student conductors. Prereq: Conducting I or consent of instructor and admission to Teacher Education Program. Letter grade only, F

330 Music Methods for the Elementary School (3) Music materials and methods in the elementary grades. Primarily intended for music education majors. Prereq: Consent of instructor and admission to Teacher Education Program. Letter grade only. F

350 Field Experience in Music Education (1) Prereq: Consent of instructor. May be repeated. Maximum 3 hours. Satisfactory/No Credit only.

Courses of Instruction (181)
MUSIC ENSEMBLE (708)

301-501 Woodwind Choir (1,1) May be repeated.
302-502 Brass Choir (1,1) May be repeated.
303-503 Small Jazz Ensemble (1,1) May be repeated. Maximum 12 hours.
304-504 Jazz Ensemble (1,1) May be repeated. Maximum 12 hours.
305-505 Studio Orchestra (1,1) May be repeated. Maximum 12 hours.
306-506 Trombone Choir (1,1) May be repeated.
307-507 Tuba Ensemble (1,1) May be repeated.
310-510 Percussion Ensemble (1,1) May be repeated.
311-511 Marimba Choir (1,1) May be repeated.
312-512 Baroque Ensemble (1,1) May be repeated.
314-514 Brass Choir (1,1) May be repeated.
315-515 Chamber Music Ensemble (1,1) May be repeated. Maximum 8 hours.
316-516 Steel Band (1,1) May be repeated. Maximum 12 hours.
320-520 UT Singers (1,1) May be repeated.
321-530 Chamber Singers (1,1) May be repeated.
322-532 Collegium (1,1) May be repeated.
334-534 Saxophone Choir (1,1) May be repeated.
340-540 Opera Theatre (1,1) May be repeated.
350-550 Concert Band (1,1) May be repeated.
352-552 Campus Band (1,1) May be repeated.
354-554 Varsity Band (1,1) May be repeated.
356-556 Laboratory Band (1,1) May be repeated.
359-559 Marching Band (1,1) May be repeated.
360-560 Symphony Orchestra (1,1) May be repeated.
360-580 Concert Choir (1,1) May be repeated.
382-582 University Chorus (1,1) May be repeated.
383-583 Men's Chorale (1,1) May be repeated.
389-589 Women's Chorale (1,1) May be repeated.
399-599 Accompanying (1,1) May be repeated.

MUSIC GENERAL (698)

100 Fundamentals of Music (3) Theory and practice of basic elements of music. Writing-emphasis course.

110 Music Appreciation (3) Developing listening skills and understanding of music from the ancient world to the 20th century. For non-music majors.

120 History of Rock (3) Study and appreciation of rock music, its origins in blues and rock and roll, its development and cultural dimensions to the present. Writing-emphasis course.

130 Music Performance (3) Individualized course of study combining participation in a University musical ensemble with collateral study of an instrument or voice. One hour of applied study (Music Performance 103-450 and ensemble rehearsals as scheduled (Music Ensemble 301-389). May be repeated once for credit. Requires payment of Applied Music fee. For non-majors only.

140 Fundamentals of Performance (1-2) Private instrumental or vocal study, one or two half lessons per week (1 hour credit - elective, secondary or minor; two hours credit - major). This course is designed to prepare students for enrollment in Music Performance 103-185. Cannot be used to satisfy applied music requirements at the principal level in the B.M. or the B.A. degree in Music. May be taken for a maximum of 4 credit hours per instrument. Application of performance procedures to individual instruction and performance.

150 Internship II: Grades K-12 (3) Demonstration of professional competence in planning, instruction, and classroom management. Internship is completed in local public schools. Prereq: 481 and admission to Education Program. Satisfactory/No Credit only. Sp

210-220 Jazz Improvisation I (2) Study and application of improvisation in the context of improvisation and jazz. Must be taken in sequence.

230-240 Jazz Improvisation II (2) Advanced study of improvisation in the context of improvisation and jazz. Must be taken in sequence.

240-250 Jazz Improvisation III (2) Advanced study of improvisation in the context of improvisation and jazz. Must be taken in sequence.

260-270 Jazz Improvisation IV (2) Advanced study of improvisation in the context of improvisation and jazz. Must be taken in sequence.

MUSIC HISTORY (709)

200 Introduction to Music Literature (3) Basic forms of music and accepted masterworks throughout chronological approach. For music majors and minors only.

210-220 History of Music I, II (2,3) 210 to 1750. 220 to 1750. Must be taken in sequence.

310 Introduction to African-American Music (3) History of African-American music and music with emphasis on Black artists and their contributions. (Same as African-American Studies 310.)

320 Women in Music (3) History of women in music from the Middle Ages to the present as composers, performers, educators, and patrons. (Same as Women's Studies 320.)

350 History of Jazz (3) Origin, development, and styles of jazz music and its exponents. Cultivation of special listening techniques. (Same as African-American Studies 350.) Writing-emphasis course.

380 Introduction to Folk and Popular Music (3) Study of musics other than Western European classical music. Emphasis on musical structure. Examples will be drawn from folk, pop, rock, jazz, and non-Western repertories. Prereq: 210-220.

390 World Music (3) Basic attitudes and techniques of ethnomusicology. Survey of music cultures throughout the world, with emphasis on the Pacific, Near East, Asia, and Europe.

400 Music History Survey (3) History of music with emphasis on genres, style changes, and cultural forces. Western European tradition from 400 to 1900. Recommended as a comprehensive review course for graduate students. Prereq: Consent of instructor.

410 Music History Genre (3) Topics vary. May be repeated for credit. Maximum 6 hours.

420 History of Opera (3) Dramatic, vocal, and orchestral elements in the operas of Italian, French, and German schools 1600-1800.

430 Synphonic Literature (3) Survey of literature for orchester from Baroque to Beethoven, with emphasis on the evolution of the symphony.

440 Music of North America (3) Folk and art music of the United States and Canada from colonial times to the present. Writing-emphasis course.

450 Composer Seminar (3) Life and works of a single composer. Subject varies.

460 Music Aesthetics (3) Nature of music and musical experience, sense perception and emotions, music and role of artist in society. Aesthetic viewpoint of individuals and historical eras through selected writings. Writing-emphasis course.

480 Music in Christian Worship (3) Hymnody, liturgies, and liturgical music.

490 Church Music Methods and Administration (3)

493 Independent Study (1-15) Prereq: Consent of department head. May be repeated for credit.

MUSIC INSTRUMENT (710)

310 Brass Literature and Pedagogy (3) Survey of brass solo and ensemble literature, including instructional materials and methods. Application of pedagogical procedures to individual instruction and performance; demonstration lessons by applied brass faculty and class members. Prereq: Consent of instructor.

320 Woodwind Literature and Pedagogy (3) Survey of woodwind solo and ensemble literature, including instructional materials and methods. Application of pedagogical procedures to individual instruction and performance; demonstration lessons by applied woodwind faculty and class members. Prereq: Consent of instructor.

330 Percussion Literature and Pedagogy (1) Survey of percussion solo and ensemble literature, including instructional materials and methods. Application of pedagogical procedures to individual instruction and performance; demonstration lessons by applied percussion faculty and class members. Prereq: Consent of instructor.

340-350 String Literature and Pedagogy I, II (3,3) Survey of string techniques, issues, research and pedagogies; topical presentations by the applied string faculty and guests. 350-Developing the violin family of instruments and bows; survey of string literature, performances, and performance styles, application of historical, analytical, and pedagogical procedures to performance. Prereq: 340 and applied enrollment in strings at 300 level or above or consent of instructor.

490 Instrumental Conducting (3) Knowledge and skills in instrumental conducting; various periods and composers and relationship of different styles to the conductor's role in the musical analysis and instrumental conducting. Prereq: Music Education 320 or equivalent.

MUSIC JAZZ (711)

110 Jazz Theory (2) Fundamentals of the jazz language, including terminology, chord symbols, chord scales, and chord progressions, plus ear-training lab. Prereq: Music Theory 110.

120 Analysis of Jazz Styles (2) Individual improvisatory styles through analysis of their transcribed solos. Training and function of the ear in music. Transcription of solos from recordings and preparation of analysis. Prereq: 110.

130-140 Jazz Piano I, II (1,1) Harmonic language of jazz. Interpretation of chord symbols, formulae for voicing chords, chord progressions, and fundamental melody-playing and improvisation for right hand. Must be taken in sequence.

150 Studio Guitar Styles (2) Introduction to guitar styles in jazz, rock, country, and blues idioms. Prereq: Consent of instructor.

160 Introduction to Styles in Jazz Drumming (2) Examination of major composer and performers who have contributed significantly to creation of principal styles of jazz drumming.

210-220 Jazz Improvisation I, II (2,2) Study and application of principles of improvisation, including nomenclature, chord progressions, chord-scales, patterns, melodic development, and tune styles. Prereq: 110.

310 Jazz Composition and Arranging (2) Prereq: Consent of instructor.
MUSIC KEYBOARD (712)

110-120 Class Piano I, II (1,1) Development of keyboard technique in reading, technique, repertoire, harmonization, and transposition. Must be taken in sequence.
210-220 Class Piano III, IV (1,1) Continuation of 110-120; 220 completes piano competency requirement; must be taken in sequence.
230 Keyboard Harmony (1) Melody harmonization, figured bass realization, and improvisation. Prerequisite: Music Theory 110-120.
240 Church Service Playing I (1) Practical skills applicable to the use of the organ in church services, including improvisation, hymn playing, and accompanying. Prerequisite: 230 and organ proficiency at the 200 level.
310-320 Church Service Playing II, III (1,1) Continuation of 240. Prerequisite: 240.
330 Sight Reading at the Keyboard (1) Prerequisite: Consent of instructor.
340-350 Piano Pedagogy I, II - Practicum (3,3)
360-370 Piano Pedagogy III, IV (3,3) Intermediate to advanced methods and materials related to the development of principles of learning; discussion of problems and experiences in practice. Prerequisite: 340-350.
440-450 Piano Pedagogy I, II (3,2) Pedagogical methods and materials related to the development of principles of learning; specific programs based on pupil aptitude and background; collation in teaching experience. Must be taken in sequence. Prerequisite: Consent of instructor.
460-470 The Organ and its Literature I, II (3,3) Development of the organ and organ literature from the Middle Ages to the present; problems of style and interpretation; pedagogical literature and methods; organ design. Prerequisite or Corequisite: Music History 220 and consent of instructor.
480 Teaching Class Piano (3) Historical survey and evaluation of teaching materials and methodology for college and/or adult beginning piano classes, with collateral teaching experience. Prerequisite: Consent of instructor.
485 Suzuki Piano Method I (2) Study of the psychology, procedure, and literature of the Suzuki piano method. Must be taken in sequence. Prerequisite: Consent of instructor.
490-491 Internship (2,2) Opportunity for pedagogy students to gain experience in teaching pre-college students under the supervision of experienced instructors.
495 Suzuki Piano Method II (2) Study of the psychology, procedure, and literature of the Suzuki Piano Method. Prerequisite: Consent of instructor.

MUSIC THEORY (714)

110-120 Theory I, II (3,3) Materials of music including basic elements through triads and seventh chords and modulation. Emphasis on analysis of music with emphasis on common practice.
130 Ear Training I (1) Development of proficiency in identifying and notating melodic, harmonic and rhythmic models. Includes computer lab. Should be taken concurrently with Theory I and II.
140 Ear Training II (1) Development of proficiency in identifying and notating melodic, harmonic and rhythmic models. Includes computer lab. Should be taken concurrently with 130.
210-220 Theory III, IV (3,3) Materials of music with emphasis on literature of Classical, Romantic, and contemporary periods. Exercises in writing and analysis must be taken in sequence. Prerequisite: 120 or consent of instructor.
230-240 Advanced Ear Training III, IV (1,1) Development of skill in identifying and notating complex melodies, harmonic, and rhythmic models. Must be taken in sequence. Prerequisite: 130-140. Corequisites: 210-220.
250 Composition (2) Writing short vocal and instrumental compositions using conventional and new forms of notation. Prerequisite: 220 or consent of instructor. May be repeated for credit. Maximum 4 hours.
290 Sound Recording Techniques (3) Theory and applications of tape recording’s sound reproduction and reinforcement systems. Includes recording techniques, microphone use, and equipment. Prerequisite: Consent of instructor.
310-320 Composition (3) Study and practice in analysis of forms of music from smallest structural units to large compound forms. Prerequisite: 220.
320 Instrumetnation (2) Basic techniques in scoring for voice, brass, woodwind and string choirs and percussion. To be taken by music and music education majors.
340 Introduction to Computer Music Transcription (3) Exercise in notation, playback and publishing incorporating elements of word processing, graphic design, sequencing and page layout. Study of Music Instrument Digital Interface protocols and interface with computer music work station design. Prerequisite: Consent of instructor.
390 Sound Synthesis Techniques (3) Studio and real-time applications of synthesizers: acoustic background, synthesis techniques, transfer of concepts, instrument interface and usage. Prerequisite: 290 or consent of instructor.
400 Survey of Music Theory (3) Emphasis on harmonic practice of Baroque, Classical, and Romantic periods. Exercises in writing and analysis. Recommended as a review course for graduate students. Prerequisite: Consent of instructor.

NUCLEAR MEDICINE TECHNOLOGY (718)

Courses in this concentration are open only to qualified students who have completed the first three years of the Nuclear Medical Technology Curriculum, described in the College of Arts and Sciences curriculum section of this catalog, and who have been admitted to the Nuclear Medical Technology Program at UTMC.

410 Physics for Nuclear Medicine I (3) Atomic physics, mathematical, and statistical. Survey of historical and current concepts in atomic structure, nuclear structure, interrelationships between matter and energy, nuclear reactions, nuclear stability, production of radionuclides, radionuclide decays, and techniques used in nuclear identification and behavior prediction. May be repeated.
411 Nuclear Instrumentation (3) Course concerns non-imaging detection, quality assurance, and limitations. Non-imaging topics include basic radiation detectors, their applications, functions, and limitations with overview of basic electronics, gas-filled detectors, statistics and counting, and solid and liquid scintillation detection systems, semiconductors and instrument stabilization, and quality control. Imaging topics are instrumentation of imaging devices, including basic function, application of principles and quality control. Quality assurance and maintenance requirements of nuclear instrumentation, radiation safety practices, and statistical analysis of quality control data.

412 Radiopharmacy (2) Emphasis on basic chemistry and radiochemistry in nuclear radiopharmacy. Topics include radiopharmaceutical preparation and quality assurance, radionuclide production, and basic photographic film chemistry. Kinetics, biodistribution, and mechanisms of localization are also included. Plus guidelines and regulations governing radiopharmacy management and operation.

415 Physics for Nuclear Medicine II (3) Continuation of 410 with focus on radiology and radiation therapy. Radiation topics include dosimetry, radiation and matter, cellular and systemic responses to radiation, and late and somatic and genetic effects. Biologic effects of low dose and radiation and dose calculations, and benefit versus risk factor. Radiation safety topics include exposure terminology, dose limit recommendations, radiation protection, radiation monitoring equipment, and methods and techniques for safe practice of nuclear medicine.

420-430-440 Clinical Nuclear Medicine I, II, III (4,4,4) Theories and applications of nuclear medicine methodology. Patient care, patient safety in the nuclear medicine imaging center, nuclear medicine disease and diagnostic systems. II—hematopoietic and hematopoietic systems, genitourinary systems, musculoskeletal systems, non-organ/tumor/inflammatory imaging, cardiovascular imaging, non-imaging nuclear medicine. III—single photon emission tomography, positron emission tomography, clinical quality assurance, pediatric nuclear medicine, radionuclide therapy, and management and administration of nuclear medicine programs.

425 Computer Applications in Nuclear Medicine II (3) Computer systems, applications, and components in quantitation in nuclear medicine. Topics include acquisition modes and limitations, image processing and manipulation, and computer-aided detection with some attention to machine and language architecture and operating systems.

450-460-470 Clinical Practicum I, II, III (4,4,4) Clinical instruction in diagnostic and therapeutic procedures utilized in UT-MCMC and other clinical sites. Clinical instruction activities in imaging, instrumentation, radiation therapy, dosimetry, radiation safety and protection, non-imaging procedures, patient care and preparation, computer applications, radionuclide therapy, and basic administrative and management procedures.

475 Nuclear Medicine Registry Review (2) Preparation for National Registry Examination with emphasis on theme examination and reporting in technical critique sections.

NURSING (C20) All upper division nursing courses, except 301 and 314, and clinical practicums for those who have progressed into the major (see PROGRESSION POLICIES AND PROCEDURES) in the chapter material.

202 Health and Culture (3) An exploration of the beliefs and practices of various cultural groups within the United States. Emphasis is placed on the cultural and the health care delivery system. Implications for the helping professions are examined. This course has no prerequisites and is open to all college students.

301 Clinical Pharmacology (3) Biochemical and pharmacological effects of therapeutic drugs on the human body; positive and negative reactions to drugs and interaction effects between and among drugs. Prereq: Chemist: 111, 112 and 116 semester hours of anatomy and physiology.

302 Introduction to Professional Nursing (6) History, philosophy, and scope of nursing practice with emphasis on nursing process, cognitive and psychomotor skills necessary for effective nurse-client interactions. Clinical laboratory experiences emphasize the nursing process and its application to the care of individuals whose health problems relate to acute, chronic, or terminal illness. Requirement of fundamental nursing concepts, process, and practice: 3 lectures. 3 labs. Coreq. or Prereq.: 301. 304, 306. F

304 Nursing Assessment and Wellness Promotion (4) Development of health assessment skills, principles of wellness, spiritual, physical, and personal dimensions of health assessment. Collection, analysis, and application of assessment data for formulating wellness-oriented nursing diagnoses and use of the nursing process in promotion and wellness. Evolution and expansion of the nursing role in wellness promotion and education. Laboratory sessions for development of nursing assessment skills. 3 lectures. 1 lab. F

305 Transition to Professional Nursing (3) Current status of professional nursing; utilization of the nursing process in a changing health care delivery system. Philosophy and conceptual framework of the baccalaureate nursing program and selected physiological and behavioral deviations demonstrated by clients whose health problems require in-patient services. 2 lectures, 1 lab. For RN’s only. F

306 Health Deviation Concepts I (3) Content related to the nursing process as applied to patients with physiologic and behavioral deviations characterized by acute, chronic, or terminal illness involving aberration of fluids and electrolytes, and dysfunction in selected physiologic systems, e.g., renal, cardiac, respiratory systems. Prereq. or Coreq: 301. F

312 Introduction to Nursing Research (3) Language of research, types of research designs, methodological approaches, sampling, data analysis, and significance of findings. Evaluation of existing and ongoing nursing research studies. Prereq. or 306 or consent of instructor. Prereq: 302. F, Sp

314 Wellness and Lifestyle (3) Models of wellness and health within the framework of modern medicine, eastern philosophy, and recent discoveries about the interaction of mind and body. Biopsychosocial interactions of lifestyle and genetic risk factors for cardiovascular and malignant diseases, wellness potential, and potential longevity. Process of lifestyle changes will be facilitated by faculty. Open to undergraduate students in all colleges.

315 Clinical Nursing Practicum (1) Application of nursing theories, principles, and concepts to care of hospitalized clients. Prereq.: 301, 304, 305, 306. Prereq. or Coreq.: 316, 325. For RN’s only. Prereq: 12 credits of 400 level clinical nursing courses or consent of instructor. Sp

316 Health Deviation Concepts II (3) Continuation of 306 with emphasis on the nursing process as applied to patients with physiologic and behavioral deviations characterized by acute, chronic, or terminal illness involving derangements in systems interdependent nations or involving more complex and critical illnesses such as circulatory failure, cardiac dysrhythmias, neurological damage. Prereq. 301, 306. Prereq.: All 300 level clinical nursing courses. F, Sp

320 Advanced Placement Credit: Care of the Adult Client (3) For registered nurses only. Only credit. Prereq. or Coreq.: 301. F, Sp

321 Advanced Placement Credit: Care of the Child Bearing Client (3) For registered nurses only. Prereq. or Coreq.: 301, 304, 305. Only credit. Prereq. or Coreq.: 301. F, Sp

323 Advanced Placement Credit: Care of Client with Mental Disorder (3) For registered nurses only. Prereq. or Coreq.: 301. F, Sp

324 Nursing of Children and Adults (6) Content and clinical laboratory experience related to nursing care of acutely ill children and adults. Emphasis on application of psychomotor and behavioral concepts to the provision of comprehensive nursing care for hospitalized clients. 2 lectures, 4 lab. Prereq. or Coreq.: 301. 302. 304, 306. Prereq. or Coreq.: 316. Sp

325 Nursing of Children and Adults (Theoretical) (3) Coreq. of 324. Prereq. or Coreq.: 301. 304, 305, 306. Sp

401 Family Health Nursing (6) Needing care of families in the family planning, childbearing, and child-rearing phases of family development. Application of theories of human growth and development, physiological and psychosocial aspects, and crisis intervention to the promotion of nursing care to families experiencing normal pregnancy and childbirth and to those experiencing such health problems as complications as congenital anomalies, high risk birth, disturbed parent-child relationships, or gynecologic disturbances. 3 lectures, 3 labs. Prereq. All 300 level clinical nursing courses. F, Sp

402 Family Health Nursing Theory (3) Theoretical component of 401. For RN’s only. Prereq. 316, 325, 326. F, Sp

403 Community Health Nursing (6) Application of the nursing process to care of individuals, families, and groups in community settings. Emphasis placed on mechanisms on health promotion, disease prevention, and control of communicable diseases. Epidemiological approach is used to identify aggregates within the population that are at risk for illness, disability, or premature death. Social, political, economic, environmental, and ethical issues related to community health nursing. 3 credit only. Prereq. All 300 level clinical nursing courses. F, Sp

404 Professional Nursing Seminar (2) Critical examination of legislative, ethical, legal, social, and educational issues and trends that have immediate or long-range implications for nursing practice. Prereq. All 300 level clinical nursing courses. F, Sp

411 Psychosocial Long-Term Nursing (6) Nursing needs of clients whose health problems are of a developmental, behavioral, or long-term nature. Equal emphasis on prevention, wellness promotion, and rehabilitation. Nursing laboratory/clinical experiences with a psychiatric and chronic illness emphasis in a variety of acute, extended care, and rehabilitation facilities. Prereq. F, Sp

412 Psychosocial Long-Term Nursing Theory (3) Theoretical component of 411. For RN’s only. Prereq. 316, 325. F, Sp

414 Community Mental Health Nursing (6) Nursing needs of clients with groups with psychosocial and long-term health problems. Emphasis placed on provide opportunities for students to apply the nursing process to clients and groups in a variety of acute, extended care, and rehabilitation facilities. Prereq. 301. F, Sp

415 Family/Community Health Nursing (6) Application of the nursing process to caregivers of healthy families, groups in the childbearing/nursing phases of development, Clinical experience are provided in a variety of hospital and community settings. Prereq. 301. 302. 304. 306. Prereq. All 300 level nursing courses. For non-nurse MSN students only. F

450 Physiological Principles (3) Concepts and principles of normal human physiology, tissue and organ function as a basis for integration of systems physiology and for understanding pathophysiologic mechanisms. Prereq: RN status or consent of instructor. No credit for students who have taken 306, 316, F, Sp

453 Oncology Nursing (3) In-depth exploration of cancer problems, includes cellular kinetics to theories of carcinogenesis and metastasis; treatment modalities and nursing interventions for the tumor, disease. Interdisciplinary approach analyzed. Prereq: 411 or 412 or consent of instructor. F

470 Special Topics (1-3) In-depth study of selected nursing topics, problems, or issues not covered in other courses. Topics determined by faculty and student interest. Prereq. Consent of instructor.

493 Independent Study (1-3) Nursing-related topic not covered in other nursing courses. Prereq. Senior standing or consent of instructor.
NUTRITION (725)

100 Introductory Nutrition (3) Nutritional concepts; current theories of food related to functional and nutritional needs through life cycle; international nutrition concerns and issues. A student who has received credit for NTR 300 may not receive credit for this course. F, Sp.

101 Food Principles (3) Food selection, safety, preparation, evaluation, meal planning, service. 2 hours and 1 lab.

300 Fundamentals of Nutrition (3) Nutrition in normal and altered health states during life cycle; nutritional analysis of diets. Prereq: Chemistry 110 or equivalent. Prereq or Coreq: Zoology 230. A student who has received credit for NTR 100 may not receive credit for this course. Sp.

302 Life Span Nutrition (3) Physiological development and psychosocial factors that influence nutrient needs and nutrition behaviors of individuals across the life span. Nutrition education strategies for various age groups. Prereq: 100. Zoology 230 or consent of instructor.

310 Physiological Chemistry (3) (Same as Biochemistry 310.)


314 Energy Metabolism and Metabolic Integration (3) Integration of carbohydrate, fat, and protein metabolism as applied to nutrient utilization and requirements in humans. Prereq: 310, 313.

316 Applied Nutrition (3) Dietary requirements; diet therapy; third party payments; dietetic practice; marketing dietetics; nutrition education. Prereq: or Coreq: 310. 2 hours and 3 labs. F, Sp.

318 Science and Practice of Nutrition Education (3) Nutrition education strategies for various age groups and for various educational settings. Prereq: 310. 2 hours and 3 labs. Sp.

410 Professional Issues in Dietetics (1) Dietetic registration; professional practice; professional ethics; self-regulation; accountability; public policy in dietetic practice. Prereq: Senior standing.

411 Nutrition in Disease (4) Metabolic processes of diseased organs and/or tissues; dietary modifications that may be employed to alleviate or prevent disease. Prereq: 310, 313.

413 Environmental Nutrition (3) Nutritional aspects of environmental health concerns. Prereq: 310. 2 hours and 1 lab. Sp.

414 Nutrition/Drug Interactions (2) Nutrient effects on efficacy and toxicity of drugs and drug effects on absorption, metabolism of nutrients. Prereq: 300 or equivalent.


420 Food and Nutritional Analysis (4) Principles, procedures, and instrumentation for analysis of food and body fluids. Prereq: 310. 3 hours and 1 lab.

431 Experimental Food Science (3) Individual and group laboratory experimentation in food science, microcomputer applications. Prereq: 312, PSYC 471. 1 hour and 2 labs. Sp.

417 Nutrient-Drug Actions (2) Nutrient effects on efficacy and toxicity of drugs and drug effects on absorption, metabolism of nutrients. Prereq: 300 or equivalent.

419 Pharmacology (3) Nutrition and pharmacology. Prereq: 310. 2 hours and 1 lab. F.

422 Food and Nutritional Analysis (5) Principles, procedures, and instrumentation for analysis of food and body fluids. Prereq: 310. 3 hours and 1 lab.

432 Experimental Food Science (4) Individual and group laboratory experimentation in food science, microcomputer applications. Prereq: 312, PSYC 471. 1 hour and 2 labs. Sp.

441 Nutrition in Disease (4) Metabolic processes of diseased organs and/or tissues; dietary modifications that may be employed to alleviate or prevent disease. Prereq: 310, 313.

442 Food and Nutritional Analysis (5) Principles, procedures, and instrumentation for analysis of food and body fluids. Prereq: 310. 3 hours and 1 lab.

443 Experimental Food Science (4) Individual and group laboratory experimentation in food science, microcomputer applications. Prereq: 312, PSYC 471. 1 hour and 2 labs. Sp.

444 Nutrition in Disease (4) Metabolic processes of diseased organs and/or tissues; dietary modifications that may be employed to alleviate or prevent disease. Prereq: 310, 313.

445 Food and Nutritional Analysis (5) Principles, procedures, and instrumentation for analysis of food and body fluids. Prereq: 310. 3 hours and 1 lab.

446 Experimental Food Science (4) Individual and group laboratory experimentation in food science, microcomputer applications. Prereq: 312, PSYC 471. 1 hour and 2 labs. Sp.

450 Specialty Landscape Construction (2) Design, materials, and construction techniques for specialized components of the landscape industry. Irrigation systems, outdoor lighting, pools and other water features, and interlocking concrete. Prereq: 390. Two 2 hour labs. F.

451 Plant Tissue Culture (3) (Same as Botany 451.)

460 Professional Practices in Landscape Construction and Management (2) Professionalism, salesmanship, proposal writing, estimating, specifications, and contract management in landscape services industry. Computer technology applicable to landscape construction and contracting industry. Includes presentations by industry representatives. Prereq: 350 or consent of instructor. 2 hours. Sp.

480 Advanced Landscape Design (4) Comprehensive application of landscape design skills. Design applications involving site layout, landscape grading, applied landscape construction, and planning design. Analysis, programming, design, drafting, estimating, and specifying applicable to a variety of landscape projects. Prereq: 290, 350, and 390. 1 hour and 3 labs. Sp.

485 Computer-Aided Landscape Design (3) Overview of Computer Aided Design (CAD) as it relates to landscape design and construction. Emphasis on site planning and construction of related landscape plan view and 3-D drawings. Introduction to operation of AutoCAD and LANDCAD software. Prereq: 280. Agric. 290 or consent of instructor.


492 Off-Campus Internship (1-3) Work experience in approved ornamental, turf or landscaping industry. May be repeated. Maximum of 6 credits. E

493 Individual Problem Study (1-3) May be repeated. Maximum of 6 credits. E

PHYSIOLOGY (745)

110 The Human Condition: Value and Reality (3) The meaning of life, the existence of God, freedom of the will, human nature and values. Writing-emphasis course.

111 The Human Condition: Knowledge and Reality (3) The place of the human spirit in a material universe and the nature and possibilities of human knowledge. May be taken before 110. Writing-emphasis course.

120 Foundations of Western Thought: Antiquity through 1500 (3) Plato, Ancient Philosophy, and the Medieval Period. Writing-emphasis course.

121 Foundations of Western Thought: 1500 through Early Twentieth Century (3) Development of Rationalist and Empiricist thought, Nineteenth Century and early Twentieth Century Philosophy. May be taken before 110. Writing-emphasis course.

130 Critical Thinking (3) An introduction to practical reasoning in natural language, designed to enhance skills in recognizing, analyzing, evaluating and constructing arguments. Satisfies Arts and Sciences Basic Skills Requirement "Mathematics, Computer Science or Logic".

135 Formal Logic (3) Introduction to formal deductive systems of propositional and predicate logic. Satisfies Arts and Sciences Basic Skills Requirement "Mathematics, Computer Science or Logic".

200 Special Topics (3) When content varies, may be repeated. Maximum 6 hours.

240 Ethics (3) Theories of ethical values. Writing-emphasis course.

242 Ethical Theory and Its Applications (3) A study of moral values and principles (e.g., utilitarian; virtue; deontological) and their application to actual ethical contexts. Open only to students registered in the College of Business Administration.

290 Social and Political Philosophy (3) Basic problems and concepts of social and political philosophy.
Courses of Instruction

320 Ancient Western Philosophy (3) Writing-emphasis course.

322 Medieval Philosophy (3) Development of medieval thought from St. Augustine to William of Occam. Secondary and primary sources. (Same as Medieval Studies 322.) Writing-emphasis course.

324 Seventeenth- and Eighteenth-Century Philosophy (3) Writing-emphasis course.

326 Nineteenth- and Twentieth-Century Philosophy (3) Writing-emphasis course.

329 Contemporary Philosophy (3) Developments in Western philosophy since 1950 including Wittgenstein, Austin, Camus, and advocates and critics of Post-Modernism. Writing-emphasis course.

342 Business Ethics (3) Ethical problems as they confront business as a social institution and individuals in business.

344 Professional Responsibility (3) Critical analysis of selected classic texts from philosophy, religious studies, and social sciences dealing with responsibility and the nature of professionalism. Theoretical principles and analytical skills applied to selected case studies and other detailed descriptions of professional practice from engineering/architecture, business/accounting, and at least one of law/politics; helping professions (social work, human services, ministry); teaching. (Same as Religious Studies 344.)

345 Medical Ethics (3) Ethical issues in medicine such as abortion, euthanasia, human experimentation, fairness in health care delivery and the doctor-patient relationship. (Same as Religious Studies 345.)

346 Environmental Ethics (3) Issues concerning the nature of the environment and the place of humanity within it.

349 War and Morality (3) Moral justification for war (jus ad bellum): legal and moral constraints in war (jus in bello).

350 Aesthetics (3) Philosophical discussion of art. Writing-emphasis course.

353 Philosophy and Literature (3) Nature of literature: philosophical assumptions in literary works. Writing-emphasis course.


360 Introduction to Philosophy of Science (3) Standard topics in philosophy of science: scientific method, nature of laws and theories, problem of induction, explanation, measurement. No background in logic is presupposed.

370 Philosophy of Religion (3) Analysis of basic issues in the philosophy of religion. (Same as Religious Studies 370.)

374 Philosophy and Religion of India (3) (Same as Religious Studies 374.)

376 Buddhist Philosophy and Religion (3) (Same as Religious Studies 376.)

379 Religion and Philosophy in China (3) (Same as Religious Studies 379.)

380 The Concept of Woman (3) The nature of woman as it has been conceived by major western philosophers from Plato to Simone de Beauvoir. (Same as Women's Studies 380.) Writing-emphasis course.

382 Philosophy of Feminism (3) Various feminist theories and their application to social issues of concern to women today. (Same as Women's Studies 382.)

390 Philosophical Foundations of Democracy (3) Philosophical problems relating to the nature and justification of the central values, principles, and concepts of democratic society. Writing-emphasis course.

393 Marxism (3) Basic philosophical issues in Marxist thought: ideology, dialectics, ethics, the critique of modern society. (Same as Russian and East European Studies 393.)

395 Existentialism (3) Themes related to freedom and finitude in the tradition that begins with Kierkegaard and Nietzsche, and extends to Heidegger and Jaspers, Sartre, and Merleau-Ponty.

400 Special Topics (3) When content varies, may be repeated. Maximum 8 hours.

411 Modern Religious Philosophies (3) (Same as Religious Studies 411.)

412 Classical Indian Systems of Philosophy: The Moksha Tradition (3) (Same as Religious Studies 412.)

420 Topics in History of Philosophy (3) One or more figures or movements from antiquity through mid-twentieth century. Prereq: 6 hours of philosophy or consent of instructor. When content varies, may be repeated. Maximum: 9 hours.

425 American Philosophy (3) Colonial to early 20th Century. Prereq: 6 hours of philosophy or consent of instructor. Writing-emphasis course.

435 Intermediate Formal Logic (3) Metatheory of formal logic and philosophy of logic. Prereq: 135 or consent of instructor.

440 Contemporary Ethical Theory (3) Topics in meta-ethics or ethics. Prereq: 6 hours of philosophy or consent of instructor.

446 Philosophy of Science (3) Methodological and conceptual issues in the natural and social sciences: patterns of theory modification and replacement, the nature of explanation and causation, the status of theoretical entities. Prereq: 360 and one year of natural or social science, or consent of instructor.

458 Philosophy of History (3) Speculative and critical aspects of philosophy of history. Prereq: 6 hours of philosophy or consent of instructor.

470 Philosophy of Mind (3) Problems of mind and body in relation to consciousness and personal identity. Prereq: 6 hours of philosophy or consent of instructor.

475 Analytic Metaphysics and Epistemology (3) Topics in metaphysics and epistemology in recent Anglo-American tradition. Prereq: 6 hours of philosophy or consent of instructor.

476 Studies in Recent Continental Philosophy (3) Selected thinkers or topics from areas such as Existentialism, Phenomenology, Hermeneutics, Structuralism, Post-Structuralism. Prereq: 6 hours of philosophy or consent of instructor.

490 Foreign Study (1-15)

492 Off-Campus Study (1-15)

493 Independent Study (1-15)

PHYSICAL EDUCATION ACTIVITY PROGRAM (764)

The following courses may not be repeated:

200 Special Topics (1-2) When content varies, may be repeated. Maximum 6 hours.

201 ARC WS1-Handicapped (1)

202 Badminton (1)

203 Elementary Ballet I (2)

204 Elementary Ballet II (2)

205 Basketball (1)

206 Bowling (1)

209 Flag Football (1)

210 Folk and Square Dance (2)

211 Golf (1)

212 Handball (1)

213 Ice Skating (1)

214 Elementary Jazz I (2)

215 Elementary Jazz II (2)

216 Martial Arts: Special Topics (1)

217 Coed Gymnastics: Men's Apparatus (1)

218 Elementary Modern Dance I (2)

221 Elementary Modern Dance II (2)

222 Paddleball (1)

223 Personal Safety and Self-Defense (1)

224 Physical Fitness: Conditioning (1)

225 Physical Fitness: Exercise to Music (1)

226 Exercise and Weight Control (1)

229 Physical Fitness: Jogging (1)

230 Physical Fitness: Swimming (1)

231 Physical Fitness: Walking (1)

232 Racquetball I (1)

233 Racquetball II (1)

234 Soccer (1)

235 Social Dance (2)

236 Softball (1)

239 Beginning Swimming (1)

240 Intermediate Swimming (1)

241 Emergency Water Safety (1)

242 Tap Dance I (2)

243 Tap Dance II (2)

244 Tennis I (1)

245 Tennis II (1)

246 Track and Field (1)

249 Tumbling I (1)

250 Tumbling II (1)

251 Volleyball (1)

252 Weight Training (1)

253 Coed Gymnastics: Women's Apparatus (1)

254 Yoga and Relaxation (1)

255 Water Safety Instructor (1)

256 Lifeguarding (1)

276 Fitness for Life (2) (Same as HPSS 276)

PHYSICS (773)

121-122 Introductory Physics (3,3) For students whose major is outside the physical sciences. Concepts of physics developed by observation of phenomena and logical, using a minimum of mathematical analysis. 121-122: Description of motion, forces, energy and momentum, properties of matter. 122-123: Electricity, magnetism, light, topics from modern physics including properties of atoms and nuclei. Must be taken in sequence. 3 hours lecture including demonstration lab. Prereq: Algebra.

131-132 Fundamentals of Physics: Mechanics and Heat (4,4) For engineering physics majors and Arts and Sciences majors in mathematics and the physical sciences. Basic Engineering 121-131 is equivalent course for engineers. Must be taken in sequence. Coreq: Mathematics 141-142. 3 hours lecture, 2 hours lab.

133 Fundamentals of Physics: Mechanics and Heat (4) For engineering physics majors and Arts and Sciences majors in mathematics and the physical sciences. Coreq: Mathematics 141, 4 hours lecture, 3 hours lab.

134 Fundamentals of Physics: Electricity, Magnetism, Waves, and Optics (5) Continuation of 133. Prereq: 133 or 131-132. Coreq: Mathematics 142. 4 hours lecture, 3 hours lab. This course will satisfy the prerequisite requirement for various upper division physics courses that require Physics 231.

141-142 Nature of the Physical World (3,3) Concepts, vocabulary, and principles of physical sciences to establish a unified picture of the physical universe. 141: Principles of mechanics, electricity, and wave motion are developed and applied to fields such as solar systems, atomic and molecular behavior, radiation, dynamic changes in atmospheres and in earth's crust. 142: Principles applied to topics such as stellar and galactic phenomena, nuclear energy, cosmology, atmospheric and oceanic phenomena, drifting continents, and science and society. Must be taken in sequence. 3 hours lecture including demonstration lab.

151-152 Elements of Physics for Computer Scientists (4,4) For students majoring in computer science. Principles of mechanics, heat and thermodynamics,
wave motion and sound, electricity and magnetism, light, relativity, and modern physics. Must be taken in sequence. Coreq: Mathematics 141-142. 3 hours lecture.

181 Physics of Music (3) Production, transmission, and reception of sound waves. Frequency, intensity, timbre. Basic acoustics of instruments and voice. 3 hours lecture and demonstration.

221-222 Elements of Physics (4, 4) Basic physical principles and applications. Introduction to pre-medical, pre-pharmacy and pre-veterinary programs. Mechanics, heat, wave motion, and optics. 222-Electricity and magnetism, modern physics. Must be taken in sequence. 3 hours lecture. 3 hours lab. Prereq: Mathematics 130 or Calculus.

231 Fundamentals of Physics: Electricity and Magnetism (3) For engineers and Arts and Sciences majors in mathematics and the physical sciences. Required of all engineering students. Prereq: 131-132 or Basic Engineering 121-123. Coreq: Mathematics 231. 2 hours lecture, 3 hours lab/ lab/recitation.


240 Fundamentals of Physics: Modern Physics (3) Primarily an introduction to the basic concepts and relativity, fundamental concepts of modern physics and their applications to atomic systems. Prereq: 138.

311-312 Mechanics (3, 3) 311-Kinematics and dynamics of simple particle systems, rotating reference systems, many body problems. 312-Motion of rigid bodies, Lagrangian and Hamiltonian mechanics, small oscillations, normal modes. Must be taken in sequence. Prereq or Coreq 311; 231 or 138 and Mathematics 231. Coreq for 312: Mathematics 241.

321 Thermal Physics (3) Concepts of temperature and heat, laws of thermodynamics; elementary statistical mechanics; applications to physical and chemical problems. Prereq. 311, or 138, or 231 and consent of instructor.

341 Introduction to Nuclear Physics (3) Introductory theoretical nuclear physics with emphasis on applied aspects. Primarily for Nuclear Engineering majors. Prereq: 240 or 232.


361-362 Electronics Laboratory (3, 3) Electronic devices and instrumentation techniques in the physics laboratory. 361-Basic analog and digital electronics, including elementary building blocks of relevance to data acquisition systems, operation amplifiers, digital-to-analog and analog-to-digital conversion, use of standard laboratory instruments, and use of computer programs. 362-Advanced instrumentation techniques applied to the study of electronic circuits as dynamic physical systems, feedback, controllability, stability, Fourier analysis and synthesis, nonlinear circuit dynamics. Prereq: 136 or 232. 6 hours lab per week.

401 A Survey of Physics (3) A survey of physics from earliest times to the present, emphasizing the unifying philosophical and mathematical principles. Classical theories of gravitation, electromagnetic and relativity, various forms of quantum mechanics, quantum electro-dynamics, and recent theories of particles, fields, and their interactions. Consideration of the effects of physics on modern society and the practice of physics from a values-oriented viewpoint. Coreq: 361. 3 hours lecture. 3 hours lab. Prereq: Consent of instructor.


421 Modern Optics (4) Transmission of light in uniform, isotropic media, reflection and transmission at interfaces; mathematics of wave motion and interference phenomena. Elements of Fourier optics and holography. Prereq: 431, or either 232 or 138, and consent of instructor. 3 hours lecture, 3 hours lab.


451 Techniques of Theoretical Physics (3) Methods and general solutions in potential theory, spectral analysis, wave mechanics, quantum electrodynamics, and other selected theories of theoretical physics. MUST be taken in sequence. Prereq: 232 or 138 and Mathematics 241.

461-462 Modern Physics Laboratory (3, 3) 461-Introduction to fundamental and modern techniques in experimental physics, and to the theory and practice of measurement and data analysis using modern instruments in nuclear, atomic, and molecular and solid state physics, and modern optics. Prereq: 361 and either 240 or 411. 462-Advanced experimental techniques in modern physics; experimental team work. Theory through numerical and mechanical interpretation of the results and preparation of scientific reports. Prereq: 461. 6 hours lab per week.

471-472 Health Physics (3, 3) Radioactivity, interaction with matter, radiation quantities and units, point source and extended sources, alpha and gamma rays, neutron activation, interaction of ionizing radiation with matter: stopping power, range-energy relations, counting statistics, shielding, dosimetry, waste disposal, criticality prevention, radiation biology and ecology. Prereq: consent of instructor.

490 Senior Seminar (1-3) Topics of current interest. May be repeated with consent of department. Maximum 6 hours.

491 Foreign Study (3-15)

492 Off-Campus Study (3-15)

493 Research and Independent Study (1-3) Research and study in field of particular interest with faculty guidance. Consent of department is required. Maximum 12 hours.

PLANNING (782)

401 The City in the United States (3) Development and character of United States cities. Contemporary issues and selected case studies. (Same as Urban Studies 401.)

420 Survey of Planning (3) History of city development and of planning with special attention to the United States experience in urban and other local planning. State of the art, the process, the comprehensive plan, implementation devices. Planning issued in society. Not for credit for M.S.P. students (Same as Urban Studies 402.)


PLANT AND SOIL SCIENCE (792)

200 Current Topics in Environmental Science (1) Lectures and invited presentations on current environmental issues and careers in Environmental Science. Prereq: Electromagnetic radiation with matter, radiation quantities and units, point source and extended sources, alpha and gamma rays, neutron activation, interaction of ionizing radiation with matter: stopping power, range-energy relations, counting statistics, shielding, dosimetry, waste disposal, criticality prevention, radiation biology and ecology. Prereq: consent of instructor. Maximum 12 hours.


312 Soil and Water Conservation (2) Hydrologic, agronomic, and engineering principles applied to resource management problems including flood and erosion control, drainage and water quality. Prereq: 210. Coreq: 313. S.

313 Soil and Water Conservation Laboratory (1) Laboratory on topics covered in 312. Coreq: 312.

315 Field and Forage Crops (3) Agronomic principles of crop production and management. Crop improvement, creating systems, tillage, fertilization, pest management, harvest and utilization of major field and forage crops. Prereq: 210 or 230. 2 hours and 1 lab. Sp

332 Fruit Crops (3) Fundamentals of site selection. Fruit propagation, tree training, pest control and related management factors for deciduous fruit crops will be emphasized. Prereq: 230. 2 hours and 1 lab. F-A.

333 Vegetable Crops (3) Characteristics, economic importance, adaptability and production of vegetables for fresh and processing markets with emphasis on both warm and cool season crops. Prereq: 210 or 230. 2 hours and 1 lab. Sp-A.

334 Weed Management (3) Principles of weed interference, integrated management, herbicide selectivity and behavior, specific recommendations for intercrop and non-crop situations. Prereq: 210. 2 hours and 1 lab. F.

392 Practicum (2-4) Working with agricultural, environmental or natural resources-related enterprises in area of career interest. Minimum of 40 hours prerequisite for any course in Plant and Soil Science. Prereq: Consent of advisor and faculty committee. E.

401 Seminar (1) Current topics in the plant and soil sciences. Techniques of effective oral and written professional presentation; professional ethics; review of literature; assignments for written and oral presentations. Senior standing. Sp.

411 Soil Microbiology (3) Soil microbial population and the soil ecosystem; microbial transformations of organic and organic compounds; decomposition of residues; dynamics of soil organic matter. Prereq: 210 and Chemistry 110 or 350 or consent of instructor. 2 hours and 1 lab. F.

412 Soil Genesis, Classification and Mapping (3) Soil genesis and formation: observing and describing morphological, agronomic and forest soils; chemical and physical properties, classification, mapping. Two Saturday field trips required. Prereq: 210 or consent of instructor. 2 hours and 1 lab. F.

413 Soil Chemistry (3) Structure and chemical properties of soil materials with emphasis on the loss fraction as it relates to exchange, chemical equilibrium, soil acidity, oxidation-reduction, weathering, nutrient availability and waste disposal. Prereq: 311 or consent of instructor. F.

414 Soil, Land Use and the Environment (3) Soil as an environmental component and soil properties affecting land use. Soil as a resource in development planning including non-engineering aspects of site selection for land use, soil survey and resource data in land use, recognition and prevention of soil pollution. Prereq: 210 or consent of instructor. Sp-A.

415 Soil Hydrology (3) Physical relationships among soil, liquid, and gaseous phases of the soil system. The relationships of soil properties to the processes governing movement of water and chemicals in soil. Prereq: 210. 2 hours and 1 lab. F, A.

431 Crop Physiology and Ecology (3) Plant physiology and ecology applied to crop production. Effects of environmental factors on physiological processes. Prereq: 210 or 230. 3 hours.

432 Bioecology (3) Solar energy budget: interactions between global, regional and local climates and biological systems; qualifications of macro and microclimate, micrometeorites and their climates; the creation and interpretation of weather station data collection and analyses; biological responses to climatic stresses; climate variation and change and their effects on biological systems. Prereq: One year of physical or biological science, junior standing. 2 hours and 1 lab. F-A.
433 Agricultural Pesticides (3) Regulation of pesticide development, manufacture, transportation, marketing and use. Structure, use, mode of action, degradation and environmental impact of pesticides used in agriculture. Prereq: 1 year of biological sciences and 1 semester of chemistry. 2 hours and 1 lab. Sp

434 Postharvest Biology and Technology (3) Principles, methods, and techniques related to the maintenance of quality of agricultural commodities. Emphasis is on postharvest treatments, storage, marketing and quality evaluation. Pre: 1 year of biological science and senior standing. 2 hours and 1 lab. Sp

453 Principles of Plant Breeding (3) Genetic principles and techniques used in crop improvement. Pre: Biology 220 or equivalent. 2 hours and 1 lab. Sp

471 Statistics for Biological Research (3) Notation, fieldtrips. 2 hours and 1 lab. Prereq: 1 year of biological maturation, ripening, and senescence. Two Saturday field trips. 2 hours and 1 lab. Pre: 1 year of biological science and junior standing. F, A

483 Insect Pesticides (3) Principles and methods of insect pest control. Pre: Biology 220 or equivalent. 2 hours and 1 lab. Sp

490 Modern Political Thought (3) Major political thinkers from Machiavelli to Marx. Prereq: Consent of instructor. May be repeated. Maximum 15 hours.

492 Off-Campus Study (1-15) Pre: Consent of Department. May be repeated. Maximum 15 hours.

493 Independent Study (1-15) Pre: Consent of Instructor. May be repeated. Maximum 15 hours.

494 Internship (1-4) Pre: Consent of Department. May be repeated. Maximum of 6 hours. S/N only.

PORTUGUESE (811)

111-112 Elementary Portuguese (3,3) Introduction to Portuguese. Must be taken in sequence. Language Laboratory required. F, Sp

199 Portuguese Language and World Business (2) The course will examine the importance of foreign trade at the local, state, and national levels. An interdisciplinary team of faculty from the Colleges of Business and Arts and Sciences will provide an overview of the value of language study and international cultural awareness in the world business. Restricted to students majoring in the language and World Business major concentration. See the Director for further information. F

211-212 Intermediate Portuguese (3,3) Structures read- ing, writing, listening, and speaking of Portuguese to prepare for upper division courses in the language. Must be taken in sequence. Language Laboratory required. F, Sp

300 Portuguese for Spanish Speakers (3) Accelerated class for beginning students of Portuguese with a strong background in another Romance language. Introduction to grammar, reading and culture of Portugal and Brazil. Prereq: 3 hours at 300 level in another Romance language or equivalent.

301-302 Literature, Culture & Civilization of the Portuguese-Speaking World (3,3) A course for students who have completed the intermediate sequence of Portuguese and wish to enhance their knowledge of language and culture through the medium of literature. Taught in Portuguese. Prereq: 212, 300 or the equivalent.

309 Intermediate Conversation & Composition (3) Designed to improve proficiency in oral and written communication in Portuguese. Prereq: 212, 300 or equivalent.

315-316 Aspects of Luso-Brazilian Literature (3,3) Luso-Brazilian literature through literary theory and history of literature. Prereq: At least one course at the 300 level or the equivalent. (Same as Latin American Studies 315-316).

315-316 Advanced Conversation & Composition (3) In-depth and structured conversation on contemporary topics (business, politics, economics, religion, an culture) and formal writing practice at an advanced level. Prereq: 309 or the equivalent.

341-342 Topics in the Literature & Language of the Portuguese-speaking World (3,3) Outstanding works of literature and culture from the countries where Portuguese is spoken. Topics may vary. May be repeated. Maximum 12 hours. Prereq: At least one course at the 300 level or the equivalent. (Same as Latin American Studies 431-432).

409 Advanced Conversation & Composition (3) In-depth and structured conversation on contemporary topics (business, politics, economics, religion, an culture) and formal writing practice at an advanced level. Prereq: 309 or the equivalent.

PSEUDOCOMMUNITY STUDIES (PES) (825)

210 Psychoeducational Issues in Human Development (3) Understanding the application of the psychol- ogy of human development to teaching/learning pro-
maximum 6 hours may be applied toward the major.

382 Contemporary Topics in Psychology (3) (Same as Counselor Education Counseling Psychology 431.)

404 Special Topics (1-3) Instructor initiated course offered at the convenience of the department on various topics of current interest. Contact department for listing of topics to be covered. May be repeated. Maximum 15 hours.

431 Personality and Mental Health (3) (Same as Counselor Education Counseling Psychology 431.)

432 The Disadvantaged Student: Psychosocial Perspectives (3) Theory and research regarding psychosocial behavior and appropriate interventions.

460 Self-Management in the Helping Professions (3) Applications of self-management strategies to careers, social, emotional and health domains for both helping professionals and their clients.

493 Independent Study (1-15) Independent investigation of problems in educational and counseling psychology. May be repeated. Maximum credit 15 hours.

PSYCHOLOGY (830)

110 General Psychology (3) Introduction to primary logics to the study of human behavior and experience.

210 Biological Basis of Behavior (3) Survey of theories and research concerning the role of genetic factors, nervous and endocrine systems, and other biological influences on behavior. Prereq: 110 or equivalent, or consent of instructor. F, Sp.

220 Behavior and Experience: Humanistic Psychology (3) Behavioral and phenomenological analysis of individual and social development in natural environments. Prereq: 110 or equivalent, or consent of instructor. E.

300 Child Psychology (3) The normal child from conception through infancy, childhood, and adolescence. Physical, cognitive, social, and emotional development. Prereq: 110 or equivalent and 210 or 220, or consent of instructor. E.

310 Learning and Thinking (3) Survey of theory and findings of research concerning both humans and nonhumans. Prereq: 110 or equivalent and 210 or 220 or consent of instructor. F, Sp.

320 Motivation (3) Survey of theories and related research; discussion of applications. Prereq: 110 or equivalent and 210 or consent of instructor. F, Sp.

330 Abnormal Psychology (3) Individual and environmental factors contributing to deviant, pathological, and psychotic reactions. Contemporary methods of treatment. Prereq: 110 or equivalent and 210 or 220, or consent of instructor. E.

359 Laboratory in Human Relations (3) Interpersonal relations and communication through structured experiences in small groups. Prereq: 110 or equivalent, and consent of instructor. May be repeated. Maximum 6 hours.

360 Social Psychology (3) Theories, methods, and findings of research concerning individual behavior in a social context. Prereq: 110 or equivalent, and 210 or 220. E.

370 Ethology and Sociology (3) Basic concepts in the evolutionary approach to behavior, including applications to psychology, the social sciences, and the arts. (Same as Zoology 370.) E.

375 Working with Data (3) Data organization and analysis; using graphs and figures to display data; and interpretation of data as presented in various formats. Not open to students who have received credit for Psychology 335 or 385, Mathematics 115, or Statistics 201.

382 Contemporary Topics in Psychology (3) Current issue or problem, such as architectural psychology, impact of technology on human behavior, nutrition, or stereotypes. Different topic each semester. Prereq: 110 or equivalent and 210 or 220, or consent of instructor. May be repeated. Maximum 6 hours may be applied toward major.

385 Statistics in Psychology (3) Descriptive statistics; logical hypothesis testing and statistical inference. Basic parametric and non-parametric tests. Prereq: Mathematics 110. Not open to students with credit in Mathematics 115, Statistics 201, or equivalent. E.

395 Methods of Research in Psychology (3) Fundamentals in the design, conduct, and interpretation of research, including experiments, quasi-experiments, and program evaluations. Focus on both laboratory and natural settings. Prereq: 110 or equivalent, and 210 or Mathematics 115 or equivalent, F, Sp.

396 Laboratory in Psychology (3) Introduction to techniques used in the laboratory to study topics in psychology, such as perception, memory, learning, and social behavior. Prereq: 110 or equivalent. F, Sp.

399 Supervised Research and Field Work (1-3) Field experience in community-based research and service settings. Prereq: 110 and 210 or 220, or 385 or Statistics 201 or Mathematics 115 or equivalent, or consent of instructor. May be repeated. There is no restriction on the number of times or hours this course may be repeated. May be repeated up to 6 hours in 399, 491, 492, and 493 combined may be applied toward the major. E.

400 Cognitive Psychology: Language and Symbolic Processes (3) Psychology of knowing, explaining, and using language as a tool for behavior and experience. Prereq: 310 or consent of instructor. F.

409 Group Facilitation (3) Study of theory and techniques in group work with special emphasis on group process. Prereq: 359 and consent of instructor. May be repeated. Maximum 6 hours.


424 Psychology and the Law (3) Psychological aspects of legal systems. Prereq: 110 or equivalent, upper-division standing and consent of instructor.

430 Health Psychology (3) Psychological factors related to health and illness, including stress, personality, and behavior. Prereq: 110 or equivalent, 210, or consent of instructor. F.

434 Psychology of Gender (3) Biological, psychological, and social factors in gender. Importance of gender roles and stereotypes for behavior and experience. Prereq: 110 or equivalent, 210, 220. (Same as Women's Studies 434.)

440 Organizational Psychology (3) Social-psychological analysis of organizations, emphasizing role-theory and systems theory. Prereq: 385. (Same as Management 440.)


450 Comparative Animal Behavior (3) (Same as Zoology 450.) F.

459 Comparative Animal Behavior Laboratory (3) Coreq: 450. (Same as Zoology 459.) F.

461 Physiological Psychology (3) Nervous system and physiological correlates of behavior. Biological bases of emotion, learning, memory, and thinking. Prereq: 110 or equivalent, 210, and one year of Biology or Zoology introductory courses or equivalents. F, Sp.

469 Laboratory in Physiological Psychology (3) Laboratory studies of nervous system and physiological correlates of behavior. Coreq: 461.


480 Theories of Learning (3) Classical and current approaches to teaching and cognition. Prereq: 310.

482 Topics in Psychology (3) Intensive analysis of special topics, such as African-American Psychology or evaluation of programs in the community. Prereq: 210 or 220 and at least one upper-level course recommended. Prereq: 385, 395. May be repeated. Maximum 6 hours may be applied toward the major.

489 Supervised Research (1-9) Prereq: Consent of instructor. May be repeated. Maximum 12 hours in 399, 491, 492, and 493 combined may be applied toward the major. E.

491 Foreign Study (1-5) Prereq: Consent of instructor. May be repeated. Maximum 12 hours in 399, 491, 492, and 493 combined may be applied toward the major.

492 Off-Campus Study (1-5) Prereq: Consent of instructor. May be repeated. Maximum 12 hours in 399, 491, 492, and 493 combined may be applied toward the major.

493 Independent Study (1-15) Prereq: Consent of instructor. May be repeated. Maximum 12 hours in 399, 491, 492, and 493 combined may be applied toward the major. F, Sp.

496 Senior Seminar: Great Ideas in Psychology (3) Key ideas that have shaped conceptions of human mind. Exploration of historical development, scientific evolution, and larger social context. Prereq: Consent of instructor and senior standing. Writing-emphasis course. F, Sp.

PUBLIC HEALTH (839)

300 Introduction to Public Health (3) Aspects of public health including discussion of contemporary and controversial health issues, E.

305 Communicable and Noncommunicable Diseases (3) Concepts of the prevention of common communicable and chronic disease problems including control and prevention. Prereq: 1 year of biological science or consent of instructor. E.

310 Environmental Management and Control (3) Contemporary principles and methods of control of disease-producing agents in our environment. Emphasizes concepts for effective application of control principles to vocational endeavors, and/or daily living activities. Includes bookkeeping, water quality (chemical, physical and biological), waste management (liquid, solid and hazardous), vector control, safe food management, recreational sanitation and safety to include pool management, shelter hygiene (homes, child care, schools, hospitals, etc.), occupational health and safety. F, Sp.

400 Consumer Health (3) (Same as Health 400.) E.

410 Health in the Work Environment (3) Fundamental activities involved in field of industrial health aimed at reducing health problems for employees. Emphasizes on workplace health hazards and problems of concern to nurses, medical staff, management, engineers and others involved in industrial health and safety fields. Prereq: Consent of instructor. May not be taken for credit by occupational health concentration (MPH) majors. F.

493 Directed Independent Study (1-3) Individual study of selected issues. Prereq: Consent of instructor. May be repeated. Maximum 6 hours.

RECREATION AND LEISURE STUDIES (853)

110 Foundations for Leisure Studies and Services (3) Focuses on understanding concepts, principles, and practices relevant to providing leisure service including philosophy, history and theory, programming, economics, leadership, and a survey of leisure services organizations and occupational opportunities. F, Sp.

210 Dynamics of Recreation Leadership (3) Theories, practices, and concepts as they apply to all areas of recreation leadership. F, Sp.

250 Specialized Study in Leisure Education (1-3) Focus on developing positive attitudes toward leisure. Contribution of leisure to human development and physical health. Creative Cooking, Bike Hikes, New Games. E.

290 Practicum in Recreation (1-3) Supervised practice in approved agencies offering leisure and sport management opportunities. Each hour of credit requires 40 clock hours of work. Freshmen, sophomores only. SNC only. Prereq: Permission of instructor. E.

310 Leisure Program Development and Evaluation (3) Essential elements and basic principles involved in organization, administration, marketing, evaluation of various types of recreation programs with emphasis on development of program objectives, practical and comprehensive program designs and evaluation for popula-
424 Nature of Hearing Impairments (3) Anatomy and physiology of hearing, nature and causes of hearing loss; methods and instrumentation for assessment of hearing level; interpretation of audiologic services to medical and other rehabilitative disciplines. Prerequisite: Consent of instructor. E

390 Practicum in Recreation (1-3) Supervised practice in designed agencies offering leisure and sport management opportunities. Each hour of credit requires 40 clock hours of work. For recreation majors only. Prerequisite: 290 and permission of instructor. E

410 Maintenance and Management of Recreation and Sports Related Facilities (3) Principles for operationalizing modern facility maintenance systems and management strategies for recreation/sports related facilities and services. Cost tracking, inventory systems, specialized maintenance techniques, safety guidelines, maintenance management systems and security. Prerequisite: 110, 310 or consent of instructor. F

415 Managing Leisure/Sport & Related Facilities (3) Principles of planning, designing, outfitting and operating leisure/sport related facilities such as aquatic centers, tennis complexes, activity centers, etc. Prerequisite: 310 or consent of instructor. (Same as Sport Management 415.) F

420 Principles of Therapeutic Recreation (3) Principles and practices in therapeutic recreation including activity analysis, activity and program selection, evaluation, individual assessment, treatment plans and professional issues. Prerequisite: 320 or consent of instructor. F

430 Organization and Administration of Leisure Service (3) Principles of organization applied to provision of leisure services offered by public, private and/or commercial enterprises. Organizational structures, personnel management, evaluation, legal authority, introduction to budgeting, and procedures. Prerequisite: 310 or consent of instructor. F

440 Dimensions of Private and Commercial Recreation Businesses (3) Nature and function of recreation in private, commercial, and institutional settings. Development and management of commercial goods and services offered in leisure market, factors influencing participation, management considerations, and research in commercial recreation and tourism. Prerequisite: 110, junior standing or consent of instructor. Sp

450 Specialized Study in Leisure Education (1-6) Special interest leisure activities for developing positive attitudes toward leisure. Contribution of leisure to mental and physical health. May be repeated. Maximum 6 hours. E

490 Internship in Recreation (12) Full time practice in approved leisure or sport management agency. Emphasis on supervision of leisure development procedures. Prerequisites: 290, 390, senior standing. Satisfactory/No Credit only. E

REHABILITATION AND DEAFNESS (855)

371 Audiology I (3) (Same as Audiology and Speech Pathology 371.)

410 Practicum With Hearing Impaired (3) Supervised practice in hearing impaired students in pre-school, public school, and/or residential school setting.

415 Language Development for the Hearing Impaired (3) Language problems of hearing impaired contrasted with scope and sequence of normal language development. Formal linguistic systems used to describe language development. Prerequisites: 290, 390, 391, senior standing. Satisfactory/No Credit only. E

416 Language Development for the Hearing Impaired II (3) Developmental and nerial systems of teaching language to hearing impaired children. Comprehension and production deficiencies, dynamic and figurative structures. Prerequisite: 421.

419 Speech Development of Hearing Impaired (4) Theories of speech development, approaches in training perception and production of speech, and aural habilitation. Practicum experiences.

423 Communication Processes for the Hearing Impaired (3) Expressive and receptive vocabulary development in sign communication. Fingerspelling and educational applications of sign language.

313 Religious Aspects of Modern Literature (3) Issues raised for religious inquiry in contemporary literature. Relation of religious and moral considerations to problems of literary analysis; relation between religious ideas and forms of human expression (symbol, metaphor, myth, image) identified in study of literature. Writing-emphasis course.

315 Reformulation Europe, 1500-1650 (3) (Same as History 315.)

316 Topics in Religion and Literature (3) Selected themes suggest points of intersection between literary art and the religious imagination. Variable content. May be repeated. Maximum 6 hours.

319 Sociology of Religion (3) (Same as Sociology 319.)

320 Women and Religion (3) Concepts of gender in religious traditions, religious, social and psychological dimensions of gender-related symbols (e.g., the Goddess, God the Father) that shape women's and men's experiences. Contemporary Feminist issues in which religious life has liberated and oppressed women. (Same as Women's Studies 320.)


322 Christian Thought (3) Principal forms of Christian thought and their interpretation through the eyes of contemporary thinkers and figures from Augustine to Hippolyo of Hippo to Immanuel Kant. Writing-emphasis course. (Same as History 322.)

326 Images of Jesus (3) Major portrayals of Jesus Christ from the first century to the twentieth within the context of the cultural milieu which gave birth to each. Extensive use of slides, video material, recordings, and literature.

329-330 Intermediate Classical Hebrew (3) (3) 329-Residings in narrative material of the Hebrew Bible. 330-Readings in poetic and prophetic material from the Hebrew Bible. Prerequisite: 329 or consent of instructor.

332 Classical Islam (3) Content limited to events prior to 1775 CE, focusing on Islamic monotheism and the emergence of the Islamic community in the U.S. Prerequisite: Religious Studies 320 or consent of instructor. (Same as Asian Studies 332.)

333 Islam in the Modern World (3) Beginning with the Wahhabi revolution (ca 1775 CE), this course examines movements of revival and reform in modern Islam, as well as worldwide missionary activity and the growth of the Islamic community in the U.S. Prerequisites: Religious Studies 332 or consent of instructor. (Same as Asian Studies 333.)

342 Religious Ethics (3) Selected ethical theories and moral teachings of religious communities and thinkers, their action-guides for individuals and institutions, their application to persons and social problems.

344 Professional Responsibility (3) (Same as Philosophy 344.)

345 Medical Ethics (3) (Same as Philosophy 345.)

351 Introduction to Religion in the United States (3) A representative profile of religion in the United States, organized around selected local themes or problems.

352 African-American Religion in United States (3) Historical and critical examination of formation and development of African-American religious thought and institutions in America. (Same as African-American Studies 352.) Writing-emphasis course.

353 Topics in African-American Religion (3) Selected themes of African-American religious thought, their action-guides for individuals and institutions, their application to persons and social problems. May be repeated. Maximum 6 hours. (Same as African-American Studies 353.)

355 Religion and Culture in the United States (3) Selected figures, movements, and problems in American religious life, thought, and culture from pre-colonial period to present. Prerequisite: 351 or consent of instructor. May be repeated. Maximum 6 hours. Writing-emphasis course. (Same as American Studies 355.)

370 Philosophy of Religion (3) (Same as Philosophy 370.)
373 African Religions (3) Religions of the indigenous peoples of Africa, including how myth, ritual, and symbolism thrived and developed in Africa have been and are being influenced by varying sensibilities. (Same as Anthropology 373 and African-American Studies 373.) Writing-emphasis course.

374 Philosophy and Religion in India (3) Survey of the development of major non-Buddhist themes of philosophical and religious thought in India. (Same as Philosophy 374.) Writing-emphasis course.

376 Buddhist Philosophy and Religion (3) Survey of the development of Buddhism in India and further development of Buddhist philosophy and religion in India, China, Korea, Japan, the countries of Southeast Asia, and beyond. Writing-emphasis course. (Same as Philosophy 376.)

379 Religion and Philosophy in China (3) Traditional thought and religions of China: cosmology and cultural setting as basis for understanding modern China. (Same as Philosophy 379.) Writing-emphasis course.

381 Introduction to Judaism (3) History, traditions, philosophy and religion of the Jewish people grounded in the ancient period, but includes diaspora, emancipation and haskala. Writing emphasis course.

383 Religion in Japan (3) Traditional religious heritage and contemporary expressions of religion in Japan with attention to relationships of persons to nature, self-mastery and spontaneity, individual and community and secular to sacred. Writing-emphasis course.

384 Zen Buddhism (3) Historical, philosophical, and meditational aspects of Zen. Special emphasis on motifs of emptiness, impermanence, and meditation and the use of the koan. Recommended PreReq: One or more of the following: 376, 379, 383.

385 Contemporary Jewish Thinkers (3) Renewal trends in Nineteenth and Twentieth-Century Judaism. Writing emphasis. May be repeated. Maximum 6 credit hours.

386 Voices of the Holocaust (3) Historical understandings of Nazi genocides such as that of the Jewish people, Gypsies, and homosexuals. The economic, religious, social, and philosophical trends supporting mass destruction.

389 Literature of the English Bible (3) (Same as English 389.)

390 Topics in Religious Studies (3) Selected figures, themes and issues. Variable content. May be repeated. Maximum 6 hours.

405 Modern Jewish Thought (3) History, culture, and geography of the now fissioned portion of the Levant from 1590 to 1948. Must be taken with the Modern State of Israel in 1948 and the political complexities of the Middle East, Israel, Judaism and literature. Writing-emphasis course.

411 Modern Religious Philosophies (3) Religious implications of science and technology and their effect on Jewish life. Must be taken with the study of the Jews in the modern world. Topics will be selected from the following: Judaism, sociology, anthropology, and philosophy.

412 Classical Indian Systems of Philosophy: The Moksha Tradition (3) Selected writings and philosophic problems of the traditions of Samkhya, Yoga, Vedanta, Buddhism, and Jainism. PreReq: Religious Studies/Philosophy 374 or 376 or consent of instructor. (Same as Philosophy 412.)

416 Jesus and Paul Compared (3) Central ideas and concepts of Jesus and Paul compared with equivalent concepts in the other. Advanced study of the Gospels and writings of Paul, involving extensive independent research.

421-422 Elementary Sanskrit I/Intermediate Sanskrit II (3,3) 421-Introduction to the grammar of classical Sanskrit. 422-Introduction to the reading of epic and classical Sanskrit texts. PreReq: Consent of instructor. Variable content. May be repeated. Maximum 6 hours.

425 Seminar in Western Religions (3) Selected figures, themes, movements, and problems. PreReq: Consent of instructor. Variable content. May be repeated. Maximum 6 hours.

430 Seminar in American Religion (3) Selected figures, themes, movements, and problems. PreReq: Consent of instructor. Variable content. May be repeated. Maximum 6 hours.

435 Seminar in Asian Religions (3) Selected figures, themes, movements, and problems. PreReq: Consent of instructor. Variable content. May be repeated. Maximum 6 hours.

440 Seminar in Comparative Religion (3) Selected figures, themes, movements, and problems. PreReq: Consent of instructor. Variable content. May be repeated. Maximum 6 hours.

446 Theoretical Issues in Medical Ethics (3) (Same as Philosophy 446.)

452-453 Intermediate Sanskrit I/Intermediate Sanskrit II (3,3) 452-Advanced grammatical constructions and reading of epic and classical religious and narrative texts (e.g., Bhagavad Gita, Mahabharata, Ramayana, Kashi Sastrikabara). PreReq: 422 or consent of instructor. 453-Continued reading of classical religious and narrative texts. Introduction to classical Sanskrit poetry (e.g., Kalidasa's Shakuntala or Meghaduta). PreReq: 422 or consent of instructor.

469 Readings in Selected Languages Related to Religious Studies (1-3) PreReq: Consent of instructor. Variable content. May be repeated. Maximum 6 hours.

470 Readings and Research in Religious Studies (3) PreReq: Consent of instructor. Variable content. May be repeated. Maximum 6 hours.

471 Foreign Study (1-15)

472 Off-Campus Study (1-15)

493 Independent Study (1-15)

499 Proseminar in Religious Studies (3) For advanced students in Religious Studies, required for majors. Selected topics, eg., nature and function of myth in religion, problem of evil, transcendence, theories of religion, hermeneutics, integrating various disciplines involved in study of religion. PreReq: Consent of instructor. May be repeated. Maximum 6 hours.

RETAIL AND CONSUMER SCIENCES (665)

120 Textiles for the Consumer (3) Study of fibers, yarns, fabrics structures and finishes of textiles related to selection, use, and care by the retail consumer.

210 The Retail Environment (3) Development and overview of retailing, related businesses and industries, and the activities involved in the delivery of goods and services to the consumer.

310 Retail Buying (4) Analysis of the merchandise buying function within different types of retail organizations and structures. Application of principles associated with retail buying. Computer simulations.

311 Cultural Diversity in the Marketplace (3) Survey of cultural diversity in the domestic marketplace. Implications for retail management and the delivery of goods and services to a multicultural society.

321 Professional Development (2) Business communicators, interviewing techniques, ethics in the retail environment. Discussion of current issues in the retail industry.

350 Consumers in the Market (3) Consumer and family decision making in the domestic and international marketplace; consumer, consumer issues, advocacy, demographic issues, consumer policies in information, protection, and market choice, consumer choice in retail and other purchases, current issues in retail, marketing, retailing, personal goods, financial and risk management. PreReq: Econ 201.

390 Professional Development (2) Business communicators, interviewing techniques, ethics in the retail environment. Discussion of current issues in the retail industry.

410 Retail Management (3) Retail management from strategic perspective; analysis of retail environment, development and implementation of retail strategy. PreReq: Marketing 301.

411 Entrepreneurship and Small Business Management (3) Concepts of entrepreneurship within small business ownership and other business organizations; risk taking and risk management; management of a small business; current issues and problems. PreReq: 310, MKT 301.

501 Entrepreneurship and Small Business Management (3) Concepts of entrepreneurship within small business ownership and other business organizations; risk taking and risk management; management of a small business; current issues and problems. PreReq: 310, MKT 301.

521 Work in Western Religions (3) Selected figures, themes, movements, and problems. PreReq: Consent of instructor. Variable content. May be repeated. Maximum 6 hours.

530 Consumers in the Market (3) Consumer and family decision making in the domestic and international marketplace; consumer, consumer issues, advocacy, demographic issues, consumer policies in information, protection, and market choice, consumer choice in retail and other purchases, current issues in retail, marketing, retailing, personal goods, financial and risk management.

590 Professional Development (2) Business communicators, interviewing techniques, ethics in the retail environment. Discussion of current issues in the retail industry.

610 Retail Environment (3) Development and overview of retailing, related businesses and industries, and the activities involved in the delivery of goods and services to the consumer.

621 Professional Development (2) Business communicators, interviewing techniques, ethics in the retail environment. Discussion of current issues in the retail industry.

630 Retail Buying (4) Analysis of the merchandise buying function within different types of retail organizations and structures. Application of principles associated with retail buying. Computer simulations.

650 Professional Development (2) Business communicators, interviewing techniques, ethics in the retail environment. Discussion of current issues in the retail industry.

710 Retail Management (3) Retail management from strategic perspective; analysis of retail environment, development and implementation of retail strategy. PreReq: Marketing 301.

750 Professional Development (2) Business communicators, interviewing techniques, ethics in the retail environment. Discussion of current issues in the retail industry.

810 Retail Environment (3) Development and overview of retailing, related businesses and industries, and the activities involved in the delivery of goods and services to the consumer.

830 Professional Development (2) Business communicators, interviewing techniques, ethics in the retail environment. Discussion of current issues in the retail industry.

910 Retail Management (3) Retail management from strategic perspective; analysis of retail environment, development and implementation of retail strategy. PreReq: Marketing 301.

RURAL SOCIOLOGY (880)

380 Rural Sociology (3) Topics include cultural variability, reference group theory, social stratification, major social institutions, demographic changes, rural community and decision making, diffusion of technology and rural industrialization. PreReq: Sophomore standing. (Same as Sociology 380.)

490 Technological and Community Change (3) Analysis of communication processes whereby new technology spreads within a farm population and analysis of social institutions related to change in rural communities. PreReq: 380 or consent of instructor. (Same as Sociology 490.)

RUSSIAN (886)

101-102 Elementary Russian (4,4) Must be taken in sequence.

199 Russian Language and World Business (3) This course will examine the importance of foreign trade at the local, state, and national levels. An interdisciplinary team of faculty from the colleges of Business and Arts and Sciences will provide an overview of the value of language study and cultures, economics of information, implications on private and public sectors. PreReq: 101 or 102.

201-202 Intermediate Russian (4,4) Must be taken in sequence.

221-222 Russian Literature in English Translation (3,3) Nineteenth and twentieth-century Russian literature in English translation. PreReq: Completion of 201.

301-302 Introduction to Russian Literature (3,3) Russian poetry, short stories, and novels. PreReq: 201. Need not be taken in sequence. (Same as Russian and East European Studies 301-302.)

311-312 Russian Composition and Conversation (3,3) Practice in writing and speaking; grammar review and vocabulary building. PreReq: Completion of 301.

332 Works of Dostoevsky in English Translation (3) Crime and Punishment, Brothers Karamazov, and other works. Writing-emphasis course. (Same as Russian and East European Studies 332.)

333 Works of Tolstoy in English Translation (3) War and Peace, Anna Karenina, and other works. Writing-emphasis course. (Same as Russian and East European Studies 333.)
SOCIETY (915)

110 Social Problems and Social Change (3) 
Increasingly acute and intense problems such as alcoholism, violence, drug abuse, and environmental pollution continue to plague society. Students are expected to develop their own analytical arguments. Prereq: English 102 and/or Sociology 100 or 110 or consent of instructor.

120 General Sociology (3) 
Major concepts and theoretical approaches of sociology, emphasis on culture, socialization, social organization, and social stratification.

200 Sociological Analysis (3) 
Selected set of contemporary issues emphasizing theoretical and logical structure of the issues and development of data needed to enter into informed debate on the issues. Students are expected to develop their own analytical arguments. Prereq: English 102 and/or Sociology 100 or 110 or consent of instructor.

220 Interpersonal Communication (3) 
(Same as Speech 220.)

232 Varieties of Religious Community (3) 
(Same as Religious Studies 232.)

291 Sport in American Society (3) 
(Same as Physical Education 291.)

310 American Society (3) 
Institutional organization of contemporary American society, with particular attention to major social values. Writing-emphasis course.

311 Family (3) 
Theoretical frameworks and methodological approaches; their application in the sociological study of present and present family forms.

319 Sociology of Religion (3) 
Interrelationship of society, culture, and religion. (Same as Religious Studies 319.)

320 Interpersonal Communication Processes (3) 
(Same as Speech 320.)

321 Sociological Theory (3) 
Survey of contemporary issues and problems in sociological theory with an emphasis on their historical development and their importance for the field. Students are required to form critical appraisals of the topics addressed. Prereq: 200 or consent of instructor.

330 Computers and Society (3) 
History of computing and computer systems; capabilities of computer applications in various fields; social, cultural, and economic impacts.

331 Sociological Research (3) 
Selected issues in philosophy of social science, research design, sampling, methods of data collection, and presentation of written research report. Prereq: 200 or consent of instructor.

340 Class Structure (3) 
Class structure and conflict; causes and consequences of stratified social inequality. Emphasis on the United States. Writing-emphasis course.

343 Race and Ethnicity (3) 
Social sources of racial and ethnic cleavages and social, economic, and political consequences. Emphasis on race and ethnicity in the United States. (Same as African-American Studies 343 and American Studies 343.) Writing-emphasis course.

344 Power and Society (3) 
Sociological analysis of the formation and application of nation state policies. Examinations of 'who gets what, why and how'. Emphases on contrasting explanations of the control of the state and the relative autonomy of the state.

345 Collective Behavior and Social Movements (3) 
Collective phenomena leading to social change. Reviews types of social movements, and social protest and development, organization, and function of social movements. Emphasis on American cases. (Same as American Studies 345.)

346 Sociology of Occupations (3) 
Occupations and professions as interest groupings in work settings and the wider community.

350 Criminology (3) 
Systematic inquiry into alternative definitions of crime, statistical distribution of different types of crime, and responses to crime, primarily the police.

351 Juvenile Delinquency (3) 

352 Deviance and Social Control (3) 
Deviant, their lifestyles, social organization, and social control.

360 Environment and Resources (3) 
Relationship between scarcity of natural resources and changes in societal thinking and social structure. Topics include social and physical limits to growth and collective action problems.

363 The City (3) 
The revolutionary impact of cities and city life as seen from an anthropological perspective. The organiza-
118 Honors: Elementary Spanish (3) An introductory course for students with a special interest in Spanish, ideal for students with knowledge of another foreign language, for those who have had previous (but not extensive) experience with Spanish. Emphasis on reading, writing, speaking, and listening skills. May be repeated with consent of instructor. Writing emphasis course. (Same as Latin American Studies 401.)

402 Latin American Studies Seminar (3) Selected topics in Latin American Studies. May be repeated. Maximum 6 hours. Prereq: 6 hours of Latin American Studies or consent of instructor. Writing emphasis course. (Same as Latin American Studies 401.)

421 Phonetics (3) Prereq: 323 or permission of instructor.

422 Advanced Grammar (3) Fine points of grammatical structures. Required of all majors. Native speakers must receive permission from the instructor to take this course. Prereq: 323 or permission of instructor.

423-424 Advanced Conversation and Composition (3,3) Advanced conversational and written skills in Spanish for pre-professionals. Native speakers must receive permission from the instructor to take this course. Prereqs: for 423: 394, 395 or permission of instructor; for 424: 423 or permission of instructor.

425 Introduction to Descriptive Linguistics (3) (Same as French 425, German 425, Russian 425 and Linguistics 426.)

426 Methods of Historical Linguistics (3) (Same as Russian 426, French 426, German 426 and Linguistics 426.)

429 Romance Linguistics (3) (Same as French 429 and Linguistics 429.)

431 Spanish Civilization (3) Major social, political, and cultural developments in Spanish people from the origins of their civilization until today. Prereq: 335, 336 or equivalent. Writing-emphasis course.


450 Hispanic Drama (3) Close reading and analysis of representative works by selected dramatists of each period, either Spain or Spanish America. Topics vary. May be repeated with consent of department. Maximum 6 hours. Prereq: 335 and 336, or equivalent.

451 Hispanic Prose (3) Close reading and analysis of representative works by selected novelists, essayists or short story writers of Spain and Spanish America. Topics vary. May be repeated with consent of department. Maximum 6 hours. Prereq: 335 and 336, or equivalent.

452 Hispanic Poetry (3) Emphasis on the major poets of each period, either Spanish or Spanish-American. Topics vary. May be repeated with consent of department. Maximum 6 hours. Prereq: 335 and 336, or equivalent.

459 Capstone Colloquium in Spanish (3) An integrative experience focusing on a broad range of issues and topics that affect much of the Spanish-speaking world and also those who work with Hispanic Studies. Prereq: 335, 336 or equivalent. Writing-emphasis course.

461 Special Topics (3) Focus on some aspect of Hispanic literature, culture, linguistics, or foreign language pedagogy. Topics vary. May be repeated with consent of department. Maximum 6 hours.

471 Latin American Civilization (3) Latin America’s diverse heritage and major social and political institutions. Prereq: 335, 336 or equivalent. (Same as Latin American Studies 471.) Writing-emphasis course.

473-474 Survey of Spanish American Literature (3,3) 473-Historical survey from the Conquest to late 19th century. 474-Major literary movements, writers and works of the 20th century. Prereq: 334 or equivalent. (Same as Latin American Studies 473-474.)

479 Social Protest Literature of Latin America (3) Literature as a means of unmasking social ills that have traditionally beset Latin America. Among major themes: indigenous peoples, the Black Letter, working class women, and the role of the writer in the Latin American society. Prereq: 335, 336 or equivalent. (Same as Latin American Studies 479.)

490 Internship (1-15) Career-related experiences in the United States or abroad, arranged by the language & World Business Director. For Language & World Business majors only. Satisfactory/No Credit only.

491 Foreign Study (1-15)

493 Independent Study (1-15)
SPECIAL EDUCATION (933)

331 Articulation Disorders (3) Prereq: Admission to Teacher Education Program. (Same as Audiology and Speech Pathology 331.)

404 Appraisal of Speech and Language Disorders (3) (Same as Audiology and Speech Pathology 404.)

410 Pre-Internship Seminar (1) Objectives and policies of the internship program. Must be completed immediately preceding the internship. Prereq: Admission to Teacher Education Program. Satisfactory/No Credit only. Sp, Su

454 Education of the Gifted and Talented Children (3) Psychometric and behavioral studies of giftedness. Analysis of past and present school practices in reference to the special needs of the gifted. Prereq: Consent of instructor.

471 Internship I: Special Education (3-15) Testing methods and theories of teaching. Internship is completed in local public schools. Application for internship should be made upon admission to the Teacher Education Program. Prereq: 410 and admission to Teacher Education Program. Satisfactory/No Credit only. F

SPEECH COMMUNICATION (943)

100 Introduction to Speech Communication (3) Fundamental theories and practices with particular reference to intrapersonal, interpersonal, group, organizational, and public communication.

200 Developing Speech Confidence (1) Principles and techniques for coping with apprehension about communicating. Topics include: overcoming fear, planning, organizing, and the audience. Prereq: Consent of instructor.

210 Public Speaking (3) Preparation and delivery of informative and persuasive speeches. Topics include research, organization, adapting to an audience, topic selection, reasoning, and evaluating the discourse of others.

220 Interpersonal Communication (3) Process by which thoughts, feelings, and actions affect and are affected by the face-to-face communication situation. (Same as Sociology 220.)

230 Listening (3) Study of the principles and techniques of listening. Focuses on theoretical and practical listening skills.

240 Business and Professional Communication (3) Basic principles of communication within organizations. Topics and activities may include organizational communication theory; group problem solving, case studies, interviewing, and formal presentations.

260 Communication and Society (3) Study of communication from a sociological perspective; human communication and mass communication; mass communication media: posters, film, songs, demonstrations, dramas, and public address.

270 Argumentation and Debate (3) Rationale of decision-making in public life. Analysis, evaluation, reasoning, constructing and refuting arguments.

280 Introduction to Oral Interpretation (3) Art of reading aloud; development of interpretive techniques and their application to selected passages of prose, poetry, and drama. Writing-emphasis course.

295 Communication Research Methods (3) Survey of contemporary methods used for research in Speech Communication. Emphasis on interpreting and evaluating communication research reports.

300 Nonverbal Communication (3) Exploration of nonverbal communication's impact on interpersonal communication, origins and usage of nonverbal behavior, research strategies, and theoretical approaches.

310 Persuasion (3) Methods which contribute to effective and ineffective persuasion. Topics include credibility, message construction, receiver variables.

320 Interpersonal Communication Processes (3) Social dimensions of interpersonal communication and relationships. Prereq: Speech Communication 220 or consent of instructor. (Same as Sociology 320.)

330 Group Communication (3) Small group decision-making: evidence, argumentation, leadership, roles, and norms as they affect critical thinking in groups.

350 Communication Theory (3) Survey of social science approach to theorizing about communication.

350 Topics in Communication and Society (3) Content varies. Studies in social function of such communication forms as ceremonies, speeches, songs, plays, demonstrations. May be repeated with consent of department. Maximum 6 hours.

370 Evidence and Argumentation (3) Concept of evidence in public and mass communications; sources of evidence, and conditions affecting credibility.

380 Advanced Oral Interpretation (3) Individual and group performances of prose literature and poetry. Prereq: 280 or consent of instructor. Writing-emphasis course.

390 History of Rhetorical Theory (3) Western rhetorical theory from the 4th century B.C. to the present. (Same as American Studies 466.) Writing-emphasis course.

400 Topics in Speech Communication (3) Variable content course offering opportunity to offer subject matter not covered in an existing course. Topics, scope of subject matter, and prerequisites to be determined by the instructor. Maximum 6 hours. Major credit limited to 3 hours.

420 Communication and Conflict (3) Communication as a significant factor in the development, management, and resolution of conflict at the interpersonal, small group, organizational, and societal levels.

425 Interpersonal Health Communication (3) Interpersonal communication in health care settings. Topics include provider-client interactions, social support groups, and illness and disease. Prereq: Health Communication 320 or consent of instructor.

430 Family Communication (3) Dynamics of interactions within family systems, marriage, and parent-child relationships. Stresses family communication processes, patterns, and problems. Prereq: Child and Family Studies 220 or Speech Communication 320 or consent of instructor. (Same as Child and Family Studies 430.)

440 Organizational Communication (3) Organization and situational variables of the communication process that affect the quality of human interaction both within and outside the organization.

445 Internship I (3-15) Supervised career-related experiences using Speech Communication theories and techniques in government and for profit or non-profit organizations, culminating in a written and oral report. Prereq: Supervised Internship I and Internship II. Maximum 6 hours. Major credit limited to 3 hours.

450 Propaganda (3) Study of political commercial, and social propaganda in United States, World War I to present. Writing-emphasis course.

465 Studies in Rhetorical History and Criticism (3) May be repeated. Maximum 6 hours.

466 Rhetoric of the Women's Rights Movement to 1930 (3) Historical and critical study of public address in the campaign for women's rights from the 1830s to the 1920s. Prereq: As-American Studies 466.) Writing-emphasis course.

469 Freedom of Speech (3) Historical and philosophical perspectives on freedom of expression; legal issues in free speech controversies in the U.S. Writing-emphasis course. (Same as American Studies 469.)

476 Rhetoric of the Contemporary Feminist Movement (3) Historical and critical study of rhetoric in the campaign for women's rights in the United States from the 1940s to the present. (Same as Women's Studies 476.) Writing-emphasis course.

480 Ensemble Interpretation (3) Study and presentation of literary texts through group performance.

490 Topics in Rhetorical Theory (3) Content varies. Emphasis on a particular period, such as Greek, eighteenth century, or contemporary. May be repeated. Maximum 6 hours.

491 Foreign Study (1-15) See description of major concentration. Prereq: Junior/Senior standing with at least a 3.0 GPA or by special permission of the Department, consent of supervising faculty member and Department prior to registration.

492 Off-Campus Study (1-15) See description of major concentration. May be repeated. Maximum 6 hours. Prereq: Approval of instructor.

496 Off-Campus Study (1-15) See description of major concentration. May be repeated. Maximum 6 hours. Prereq: Approval of instructor.

497 Internship II (3-15) Supervised career-related experiences using Speech Communication theories and techniques in government and for profit or non-profit organizations, culminating in a written and oral report. Prereq: Supervised Internship I and Internship II. Maximum 6 hours. Major credit limited to 3 hours.

500 Orientation to Physical Education for Children (3) Contemporary approaches with emphasis upon movement education. Prereq: Admission to Teacher Education Program.

505 Foundations of Sport Management (3) An introduction to the scope of the sport enterprise including why business is involved in sport and an overall evaluation of sport management as a profession. F

520 Practicum 1 (2-3) Supervised part-time experience at approved site for undergraduate students preparing for coaching career goals. Each hour of credit requires 40 clock hours per semester. For Pre-Sport Management majors only. SNC 101 and PSY 120, or consent of instructor.

530 Sport Management: Theory to Practice (3) (Same as HPSS 350.)

550 Sport Management: History to Practice (3) Study of the various principles involved in the organization, promotion, and management of special events. Students will combine theory and practice through experience with assigned mentorship, supervising faculty member and Department prior to registration.

590 Independent Study (1-15) See description of major concentration. Selected readings/research in an area of speech communication to be determined by the student in consultation with supervising faculty member and, ordinarily, in an area of study not covered by departmental course offerings. Application to be made at the term immediately prior to registration. Prereq: Junior/Senior standing with at least a 3.0 GPA or by special permission of the Department; consent of supervising faculty member and Department prior to registration.

599 Seminar in Speech Communication (3) Major theoretical perspectives in speech communication, their interrelationships and applications; consideration of the significance and ethical implications of speech communication in modern society. The course will cover two or more of the disciplines. Prereq: Junior/Senior standing and completion of at least 12 hours of major requirements in speech communication. Writing-emphasis course.

SPORT AND PHYSICAL ACTIVITY (954)

100 Orientation to Physical Education (2) Overview of the professional and disciplinary areas in physical education with special emphasis on introductory field experiences. Prereq: Taken the first semester in the student's major. (Same as Exercise Science 100.) F, Sp

200 Sport Management : Theory to Practice (3) Contemporary approaches with emphasis upon movement education. Prereq: Admission to Teacher Education Program.

310 Coaching of Track and Field (1) Coaching methods and training techniques for various track and field events, including experience observing and working at meet management practices. Prereq: Approval of instructor.

315 Coaching of Baseball/Softball (1) Theoretical and practical application of various coaching techniques in baseball/softball for the secondary/college coach. Topics include analysis and selection of appropriate game plans, specific conditioning and training programs, practice organization for evaluation, scoring, and selection of offensive and defensive strategies. Prereq: Consent of instructor.

316 Coaching of Track and Field (1) Coaching methods and training techniques for various track and field events, including experience observing and working at meet management practices. Prereq: Approval of instructor.

317 Coaching of Baseball/Sofball (1) Theoretical and practical application of various coaching techniques in baseball/softball for the secondary/college coach. Topics include analysis and selection of appropriate game plans, specific conditioning and training programs, practice organization, player evaluation, scouting, individual and team offensive and defensive strategies. Prereq: Consent of instructor.

391 Psychology of Coaching (2) Major topics and theories dealing with social-psychological factors affecting and relating to sport performance, with practical implications and applications to teaching and coaching. Prereq: Progression to major or consent of instructor.

416 Athletic Coaching Field Experience (1) Practical experience in coaching and related responsibilities. May be repeated. Maximum 2 hours. Prereq: Approval of instructor.

435 Approaches to Physical Education for Children (3) Contemporary approaches with emphasis upon movement education. Prereq: Admission to Teacher Education Program.

SPORT MANAGEMENT (957)

250 Foundations of Sport Management (3) An introduction to the scope of the sport enterprise including why business is involved in sport and an overall evaluation of sport management as a profession. F

290 Practicum 1 (2-3) Supervised part-time experience at an approved site for undergraduate students preparing for coaching career goals. Each hour of credit requires 40 clock hours per semester. For Pre-Sport Management majors only. SNC 101 and PSY 120, or consent of instructor.
special events. Prereq: HPSS 290 or consent of instructor.

380 Special Topics (1-3) Study in selected disciplinary or professional areas of Sport Management. May be repeated.

390 Practicum II (3) Supervised part-time experience at approved site offering sport management opportunities. Each hour of credit requires 40 clock hours per semester. For Sport Management majors only. Synonym: Prereq: Progression to Sport Management Major and Sport Management 290.

415 Managing Leisure/ Sport & Related Facilities (3) Satisfies Recreation Management Proficiency. This course is designed for students interested in managing leisure sports and related facilities. Prereq: Consent of instructor.

440 Sport Marketing (3) Application of fundamental marketing concepts to the Sport Industry. Marketing research, promotions, fund raising, advertising, and association of marketing programs specific to sport will be covered. The historical development of sport marketing will be included. Prereq: Marketing 301 and admission to Sport Management major. Available for graduate credit. Admission by consent of instructor.

450 Legal Aspects of Sport (3) This course identifies and applies various areas of law to the sport industry. Concepts included are: judicial law, contract law, tort law, and discrimination in sport such as race, gender, ethnicity, and disability. Prereq: 350.

490 Sport Management Internship (1-15) Full time experience at approved sport management site. Internship on managerial tasks and administrative procedures. For Sport Management majors only. Prereq: Completion of all 300 level Sport Management requirements. Senior standing. Progression to Sport Management Major (Admitted to major) E

493 Directed Independent Studies (1-3) Independent study in a specialized area of sport management. May be repeated. Maximum of 9 hours. Prereq: Progression to Sport Management Major. E

STATISTICS (962)

201 Introduction to Statistics (3) Data collection; descriptive statistics, including correlation, simple regression, and time series analysis; concepts of probability and probability distributions. Bimodal and normal distributions; process improvement; estimations of means; confidence intervals, contingency tables. Prereq: Mathematics 121. E


252 Probability and Statistics for Scientists and Engineers II (3) Hypothesis testing; analysis of variance, correlation, and regression. Multiple linear regression, statistical process control. Prereq: 251 (or Statistics 201 and permission of instructor). Students must also have a working knowledge of the UTCC VAX System. Coreq: 261. Sp

261 Introduction to Statistical Software (3) Use of computer operating system commands and packaged programs for statistical data analysis and related data management tasks. Use of UTCC computing facilities. Coreq: 252. Sp

302 Statistical Methods (3) Linear regression and correlation; multiple regression, diagnostic model variable analysis; analysis of data. Emphasis on data analysis and interpretation. Prereq: Sport Management coursework facilities required. Not counted toward a major or minor in statistics. Not available for credit to students with credit in 461. Prereq: 201 or equivalent.

321 Sampling Techniques (3) Procedures used in probability sampling from finite populations. Determination of sample size. Prereq: 201. E


411 Introduction to Statistical Computing (3) Use of computer operating system commands and packaged programs for statistical analysis and file management. Not acceptable for credit for statistics majors. Prereq: 201 or 251. E

461 Applied Regression Analysis (3) Linear regression and correlation, multiple regression, polynomial regression, categorical variables, use of dummy variables, analysis of residuals. Logistic regression and its applications. Use of standard computer packages. Major writing requirement. Prereq: 291 or 251 or graduate status and consent of instructor. F, Sp

462 Analysis of Variance and Experimental Design (3) Analysis of variance techniques for single and multifactor models. Most hoc procedures. Design considerations for completely randomized, randomized block and split-plot experiments, balanced incomplete block and designs. Response surface methodology. Major writing requirement. Prereq: 291 or 251 and graduate status and consent of instructor. Sp

471 Random Processes and Probability Models (3) Functions of random variables, multivariate distributions, conditional expectations, waiting line distributions, random processes, Markov chains, queueing theory. Prereq: 251. F

483 Special Topics in Statistics (1-3) Topics vary. Prereq: Consent of instructor. May be repeated. Maximum 6 hours.

485 Principles of Statistical Process Management (3) Control charts and other statistical techniques applied to management of business processes. Prereq: Consent of department head. E

492 Internship (1-16) Supervised off-campus experience in application of statistical principles and methods in business, industry, or government, culminating in a written and oral report. Prereq: Permission of the Chairperson of the Statistics Department Undergraduate Affairs Committee. Satisfactory/No credit only. May be repeated. Maximum 6 hours.

493 Independent Study (2-5) Faculty directed reading and investigation of specified topic in probability, statistics culminating in a written report. Prereq: Two courses in statistics and permission of the Chairperson of the Statistics Department Undergraduate Affairs Committee. Letter grade or Satisfactory/No credit. May be repeated. Maximum 6 hours.

499 Independent Study (2-5) Faculty directed reading and investigation of specified topic in probability, statistics culminating in a written report. Prereq: Two courses in statistics and permission of the Chairperson of the Statistics Department Undergraduate Affairs Committee. Letter grade or Satisfactory/No credit. May be repeated. Maximum 6 hours.

THEATRE (976)

100 Introduction to Theatre (3) Understanding theatrical thought, philosophy, aesthetics, and production practices. Writing emphasis course. Prereq: Consent of instructor.

220-221 Acting (3,3) 220-Basic Acting techniques. 221-Further exploration and development of acting techniques through exercises and original scene work. Prereq: 220. Writing emphasis course.

226 Voice and Diction (3) Voice production; attention to individual speech problems. Prereq: 320 or consent of instructor.

245 Basic Stage Costuming (3) Costume design and construction; basic theory and technique. Production participation required.

250 Introduction to Scenery Technology (3) Techniques of scenery and stage properties construction. Production participation required.

260 Fundamentals of Lighting and Sound Production (3) Survey of practical information on electricity, physics, psychology, and instrumentation as they relate to stage lighting and sound production. Emphasis on hands-on skills in lab. Writing emphasis course.

310 Theatre History and Dramatic Literature I (3) History and literature of theatre. Drama in performance with particular emphasis on major trends and movements of European, Eastern and non- Mainstream Theatre from Antiquity to the Italian and French Renaissance.

311 Theatre History and Dramatic Literature II (3) History and literature of theatre. Drama in performance with particular emphasis on major trends and movements of European, Eastern and non- Mainstream Theatre from Antiquity to the Italian and French Renaissance.

312 Theatre History and Dramatic Literature III (3) History and literature of theatre. Drama in performance with particular emphasis on major trends and movements of contemporary international theatre from development of realism to present.

313 American Theatre (3) Development of theatre from origins to 20th century with emphasis on the evolution of plays, playwrights and major innovators.

320 Advanced Acting (3) Characterization and scene study in realistic plays. Prereq: 220-221 and consent of instructor. May be repeated. Maximum of 6 hours.

323 Stage Movement (3) Introduction to and application of theatre movement techniques.

324 Theatre Dance I (2) Dance techniques incorporating elements of musical theatre. Prereq: 323 or consent of instructor.

340 Introduction to Costume Design (3) Development of design and rendering skills. Prereq: 245 or consent of instructor.

355 Introduction to Scenic Design (3) Introduction to art and craft of scenic design.


401 Principles of Theatrical Design (3) Fundamental principles of design; visual and structural relationships. Projects will be assigned to develop understanding and perception.

409 Stage Make-Up (2) Problems in make-up design and application, character analysis, physiognomy and chiaroscuro. Prereq: 100.

410 Special Studies in History, Literature, and Criticism (3) Content varies. Concentrated study in a given period or area of Theatre History, Literature or Criticism. May be repeated.

420 Special Studies in Acting (3) Content varies. Exercises in selected concentrated areas such as styles, techniques, approaches, e.g., Shakespeare, movement, humor. Prereq: 320 or consent of instructor. May be repeated. Maximum 6 hours.

425 Selected Musical Theatre Techniques (2) Study and practice of musical theatre material including both dance and vocal work. Prereq: 324 or consent of instructor.

424 Theatre Dance II (2) Advanced dance technique incorporating elements of musical theatre. Prereq: 324 or consent of instructor. May be repeated. Maximum 6 hours.


446 Costume Patterning (3) Draping patterns for period costumes. Includes corsetry and the study of historic patterns 1500-1900. Prereq: 345 or consent of instructor.

450 Advanced Scenography I (3) Study and practice of theatre scenic design and production participation. Prereq: 250. Graduate credit available to theatre M.F.A. students only.

451 Advanced Scenography II (3) Study and practice of metalworking and plastics for theatrical productions; production participation will be required. Prereq: 250. Graduate credit available to theatre M.F.A. students only.

452 Advanced Scenography III (3) Study and practice of stage rigging for theatrical productions; production participation will be required. Prereq: 250. Graduate credit available to theatre M.F.A. students only.

454 Scenery Painting (2) Introduction to materials, techniques, and principles of scenic design. Development of skills. Prereq: 355 and consent of instructor.
456 Rendering (3) Techniques in monocrome and full color illustration of space and form. Some acquaintance with advanced technical perspective and freehand sketching is assumed.

462 Advanced Lighting Design (3) Advanced problems in lighting design and theory including areas such as lighting in musical theatre, opera, and dance. Prereq: 355 or consent of instructor.

464 Computer Assisted Design for Stage Lighting (3) Advanced techniques in computer assisted design for stage lighting. Work with CAD and other stage lighting software for preparation of lighting plots and associated paperwork. Prereq: Theatre 352 or consent of Instructor.

465 Aesthetics of Lighting Design (3) Theory and practice of stage lighting design with emphasis on the relationship between designers and non-design profession such as directors, actors, choreographers, architectures, etc.

470-471 Playwriting (3,3) Advanced instruction in the writing of plays. Prereq: Consent of instructor.

481 Applied Theatre: Costumes (2) Laboratory in costumes for departmental productions. Credit available only to Theatre majors only or with consent of department. 90 hours of work required.

482 Applied Theatre: Scenery (2) Laboratory in scenery for departmental productions. Credit available to Theatre majors only or with consent of instructor. 90 hours of work required.

483 Applied Theatre: Lighting (2) Laboratory in lighting for departmental productions. Credit available to Theatre majors only or with consent of instructor. 90 hours of work required.

484 Applied Theatre: Performance (2) Laboratory in performance for departmental productions. Credit available to Theatre majors only or with consent of instructor. 90 hours of work required.

485 Applied Theatre: Management (2) Laboratory in management for departmental productions. Credit available to Theatre majors only or with consent of instructor. 90 hours of work required.

491 Foreign Study (1-15) Open to any undergraduate student. Proposals must be approved in advance. See the Director of University Honors for further information.

492 Honors: Off-Campus Study (3-15) Open to any undergraduate honors student. Proposals must be approved in advance. See the Director of University Honors for further information.

493 Honors: Independent Study (1-15) Open to any undergraduate honors student. Must be used by all University Honors Scholars preparing their senior project. Proposals must be approved in advance. See the Director of University Honors for further information. Letter grade only.

UNIVERSITY STUDIES (984)

101 Freshman University Seminar (3) Introduction to university education as an adventure in personal growth and professional development. A/B/C/D grading. Open only to freshmen, transfer students, and re-entry students, or by permission of instructor.

310-320 Special Topics in University Studies (3,3) Interdisciplinary approaches to issues transcending the boundaries of a single discipline. Topics may be selected by faculty or students through arrangements with the University Studies Program. Taught by faculty from throughout the University (often team-taught). Extensive use of films, field trips, student discussion. May be repeated. Maximum: 9 hours.

311 AIDS and Society (3) Speakers from across the state speak about social, medical, emotional, and financial aspects of acquired immunodeficiency syndrome. Students are required to participate in some AIDS related community activity and to describe that activity in writing.

321 Aging and Society (3) Multidisciplinary examination of the process of aging and of the medical and community resources for coping with its stresses and challenges. Lecture and discussion. May be repeated. Maximum: 9 hours.

322 Technology, Society and the Common Good (3) Explores philosophical and religious systems with a commitment to the stewardship of the planet and those with an antagonistic or neutral perspective of the natural world. Systems are presented in conjunction with cultural species extinctions caused by or related to their beliefs and values.

410-420 Advanced Topics in University Studies (3,3) Interdisciplinary research approaches to major issues transcending the boundaries of a single discipline. Topics may be selected by faculty or students through arrangements with the University Studies Program. Taught by faculty from throughout the University (often team-taught). Extensive use of films, field trips, student discussion. May be repeated. Maximum: 9 hours.

411 Art and Organism (3) Interdisciplinary investigations of the relationship between art and biology. Readings and discussions focus on the idea that, while art is one of the most whole human cultural endeavors, it is ultimately linked to, if not emergent from, our basic biology.

412 Normandy Scholars Seminar: War and Remembrance (9) Enrollment is limited to students selected for the Normandy Scholars Program. The course has three components: The social and political history of 20th century France, and World War II—Commemoration and Memorialization. The course is team taught by members of various departments, and is preparation for four weeks of study in France during the Summer Term.

URBAN STUDIES (985)

200 Human-Environment Systems (3) (Same as Interior Design 200)

250 Introduction to Urban Studies (3) Multidimensional nature of urban studies. Includes lectures by specialists representing various disciplines to Urban Studies; application of general approaches to a specific issue, and collaborative teaching involving most faculty of Urban Studies.

321 Urban Politics and Process (3) (Same as Political Science 321)

322 Behavioral Geography (3) (Same as Geography 322)

350 Practicum in Urban Studies (3-6) Student and faculty member team, in conjunction with the East Tennessee Design Center, study a selected problem or aspect of the modern city.

401 The City in the United States (3) (Same as Planning 401)

402 Survey of Planning (3) (Same as Planning 402)

441 Urban Geography (3) (Same as Geography 441)

450 Directed Field Work (3-15) Participant observation and directed field research. Project results are presented to Urban Studies students and faculty.

454 Cities and Urban American History (3) (Same as History 454)

460 Senior Seminar (3) Variety of disciplines used to approach student selected problem. Prereq: 250, 350 and senior status. Student may not take 450 prior to having taken 450, except with prior permission of the Urban Studies Committee. Writing-emphasis course.

464 Urban Ecology (3) (Same as Sociology 464)

481 Real Estate Finance and Investment Analysis (3) (Same as Finance 481)

482 Urban Development and Finance (3) (Same as Finance 482)

WILDLIFE AND FISHERIES SCIENCE (993)

341 Law Enforcement and Public Relations (3) Fundamentals and general principles of local, state and federal laws and regulations governing natural resources and wildlife management. Principles and practices of interacting with the public.

440 Wildlife Techniques (2) Methods in wildlife damage control, forest, farm, and wetland habitat management, identification of wildlife field signs, wildlife capturing techniques and management plan preparation. Weekend field trips (2) required. Prereq: FWF 317 or consent of instructor. 1 hour and 1 lab or field.

442 Fisheries Techniques (2) Active and passive sampling techniques for fish and aquatic organisms; population estimation methods; fish handling and transport; food habits analysis; marking and tagging techniques; age determination and incremental growth analysis; stream assessment; equipment and instrumentation usage and maintenance; safety in sampling methods. Weekend field trips may be required. Prereq: FWF 317 or consent of instructor. 1 hour and 1 lab or field.

443 Fisheries Science (3) Quantification and management of freshwater fisheries including population estimation, age and growth, biological assessment, and stock. Prereq: Forestry 317 or Biology 317 and 321, or consent of instructor. 2 hours and 1 lab. 2 credits.

444 Ecology and Management of Wild Mammals (3) Biological and ecological characteristics of game mammals and endangered mammals. Current wildlife management ideas and practices of wild mammal management. Prereq: Forestry Wildlife and Fisheries 317 or Biology 321, or consent of instructor. 2 hours and 1 lab. One weekend field trip required.

445 Ecology and Management of Wild Birds (3) Biological and ecological characteristics of game birds, endangered birds, and bird pests. Current principles and practices of wild bird management. Prereq: Forestry Wildlife and Fisheries 317 and Biology 320, or consent of instructor. 2 hours and 1 lab. One weekend field trip required.

490 Ethical Basis of Wildlife and Fisheries Management (1) Ethical bases for decision-making and application of methodologies in the practice of wildlife and fisheries management. A series of seminars presented by ethical ecologists and fisheries scientists and managers. Students will be required to search and to acquaint students with a diverse perspective of ethical behavior in the practices of wildlife and fisheries management. Lectures, panel discussions, and case studies. Team taught. Prereq: Senior standing and major in natural resources. Satisfactory/No Credit grading only.

493 Independent Study in Wildlife and Fisheries Science (1-15) Special research or individual problem in wildlife and fisheries science. Letter grade or Satisfactory/No Credit.
WOMEN'S STUDIES (994)
210 Images of Women in Literature: Biography and Autobiography (3) Introduction to women's journals, diaries, autobiographies and autobiographies. Writing-emphasis course.
215 Images of Women in Literature: Fiction, Poetry, Drama (3) Introduction to the study of women through the eyes of women portrayed in a variety of literary genres (fiction, poetry, and drama), including works from diverse historical periods and cultures. Writing-emphasis course.
220 Women in Society (3) Role played by women in various societies during different historical periods, factors which have limited women's participation in society, social scientists' assumptions about women.
230 Marriage and Family: Roles and Relationships (3) Same as Family and Child Studies 220.
310 Emergence of the Modern American Woman (3) Role of women in the development of American civilization and values. Major topics include women's legal and political status, the emergence and development of feminism, women and the arts, and women's roles in industrial and post-industrial American society. Writing-emphasis course.
320 Women and Religion (3) Same as Religious Studies 320.
330 Women in Music (3) Same as Music History 330. Writing-emphasis course.
322 Women in American Literature (3) Same as English 333.
340 Women, Politics, and the Law (3) An examination of recent changes in the laws affecting women and a study of the role of women in contemporary American politics.
360 Women in Cross-Cultural Perspective (3) A study of the changing role of women in various contemporary cultures: industrial democracies, developing nations, communist countries. A team-taught course with guest lectures and slide presentations.
375 Gender in Society (3) Same as Sociology 375.
380 The Concept of Woman (3) Same as Philosophy 382.
382 Philosophy of Feminism (3) Same as Philosophy 382.
383 Women in the Greek and Roman World (3) Same as Classics 383. Writing-emphasis course.
400 Topics in Women's Studies (3) Content varies. May be repeated.
410 Sex Role Development: Implications for Education (3) Same as Educational and Counseling Psychology 410.
422 Women Writers in England (3) Same as English 422.
425 Women's Health (3) Same as Health 425.
432 Women in European History (3) Same as History 432. Writing-emphasis course.
433 Literary Portraits of French Women (3) Same as French 433.
434 Psychology of Gender (3) Same as Psychology 434. Writing-emphasis course.
453 Women in American History (3) Same as History 453. Writing-emphasis course.
460 Rhetoric of the Woman's Rights Movement to 1900 (3) Historical and critical study of public address in the campaign for women's rights in the United States from the 1850s through the 1800s. Same as Speech Communication 460. Writing-emphasis course.
469 Sexuality and Cinema (3) Explores issues surrounding sexuality, gender and cinema from points of view of feminist film criticism. Same as Cinema Studies 469.
476 Rhetoric of the Contemporary Feminist Movement (3) Historical and critical study of rhetoric in the campaign for women's rights in the United States from the 1850s to the present. Same as Speech Communication 476. Writing-emphasis course.
491 Foreign Study (1-15) Registration by consent of chair of Women's Studies.
ZOLOGY (995)
111-118 Honors: Fundamentals of Zoology (4,4) For superior students in any field; open to students with a minimum ACT composite score of 27 or a minimum GPA of 3.2, or consent of instructor. Students not achieving at least a B in the first semester must complete the sequence with Biology 120. Must be taken in sequence. NCLB, MGL, and 2010-2012. 2 hours and 2 labs.
201-202 Zoology Colloquium (1,1) Weekly discussions of current interest in zoology, including career opportunities and UT research activities, for declared and potential zoology majors. Course familiarizes students with the diverse nature, principal interests, and current applications of zoology and introduces them to UT faculty and resources. Satisfactory/No Credit only.
210-220 Human Physiology (3,3) For non-majors: not available as prerequisite or major credit in Zoology or Biology. 210 is a prerequisite to 220. 210-Biology cell biology. Reproduction, prenatal development and physiology. 220-Diversity of life forms, uniqueness of humans. Genetics and Ecology.
230 Human Physiology (5) Fundamentals of human physiology, primarily from the perspective of cellular and organ-system interactions. Credit may not be applied toward Zoology major. Prereq: Biology 230 or equivalent. 2 hours and 1 lab.
231 Animal Physiology and Reproduction (3) Same as Animal Science 320.
331 Animal Development and Embryology Laboratory (2) Coreq: 330. 2 labs.
350 Comparative Vertebrate Biology (4) Origins, phylogeny, diversity and functional anatomy of vertebrates. Laboratory involves dissection of shark, cat, and selected other vertebrates. 2 hours and 2 labs.
360 Comparative Invertebrate Biology (4) Origins, phylogeny and functional anatomy of invertebrates with emphasis on diversity of life forms and adaptations to specific local environments. 2 hours and 2 labs.
370 Ethology and Sociobiology (3) Same as Psychology 370.
380 General Entomology (3) Introductory study of insects: classification, structure, behavior, evolution, and classification of insect orders. 2 hours and 1 lab.
420 Undergraduate Research (2) Research projects under supervision of faculty. Prereq: Junior or senior standing and prior consent of instructor. May be repeated. Maximum of 4 hours may be applied toward the Zoology major.
421 Senior Thesis (3) Senior thesis, honors program. Prereq: Candidate for Honors Zoology degree.
432 Practicum in Zoology (3) Participation in individualized practical applications of zoology in community, government, and industry. Prereq: Biology 210, 220, and prior consent of instructor.
433 General Genetics Laboratory (3) Experiments designed to illustrate basic principles of inheritance. Asexual organisms used as Drosophila. Prereq: Biology 220 or equivalent.
483 General Genetics Laboratory (3) General Genetics Laboratory (3) Experiments designed to illustrate basic principles of inheritance. Asexual organisms used as Drosophila. Prereq: Biology 220 or equivalent.
491 Foreign Study (1-15) Registration by consent of chair of Zoology.
499 Perspectives in Zoology (3) Foreword considerations of the life sciences. Emphasis on current developments for applications, including societal and economic impacts and ethical and moral implications. Writing-emphasis course. An oral presentation and a referenced library-research essay are required.
520 Cell and Tissue Structure and Function (4) Animal cells and tissues at light and electron microscope levels. Prereq: Biology 210. 2 hours and 2 labs.
530 Immunology (3) Same as Microbiology 430.
539 Immunology Laboratory (2) Same as Microbiology 439.
545 Comparative Animal Physiology (3) Comparison of diverse physiological mechanisms in adaptation to particular ecosystems, ecological and evolutionary aspects. (Same as Psychology 450.)
549 Comparative Animal Behavior Laboratory (3) Introduction to observational and experimental research in ethology. Prereq: Psychology 450. (Same as Psychology 490.)
560 Evolution (3) Modern concepts of animal evolution. Prereq: Biology 220.
565 Human Genetics (3) Genetic and molecular principles and problems of human inheritance. Prereq: Biology 220.
570 Aquatic Ecology (3) Introduction to the physical and chemical nature of inland waters with description of benthic communities and their relationships. Prereq: Chemistry 120-130 and Biology 230. 2 hours and 1 lab.
573 Arachnology (3) Biology of spiders, mites, scorpions and relatives. Prereq: 390 or 392. 2 hours and 1 lab.
575 Herpetology (3) Biology of amphibia and reptiles with emphasis on ecology and adaptive radiation. Prereq: Biology 230. 2 hours and 1 lab.
579 Ichthyology (4) Evolution, classification, collection and identification, distribution and biology of fishes with emphasis on freshwater fauna of Eastern North America. Prereq: Biology 230 or consent of instructor. 2 hours and 2 labs.
576 Mammalogy (3) Evolution, classification, biogeography, ecology, behavior and functional anatomy of mammals. Prereq: Biology 230 or equivalent. 2 hours and 1 lab.
580 Physiology of Exercise (3) Same as Physical Education 480.
584 Conservation Biology (3) Application of principles and techniques of ecological research to conservation of biological diversity at genetic, population, community and ecosystem levels. Prereq: Biology 220, 230. (Same as Ecology 484.)
590 Comparative Endocrinology (3) Comparative analysis of physiology and morphology of endocrine glands in vertebrates and invertebrates, their role and interaction in maintenance of the organism and species. Prereq: 440 or equivalent.
591 Foreign Study (1-15)
592 Off-Campus Study (1-15)
593 Independent Study (1-15)
Advanced Placement Examinations 31
Academic Policies and Regulations 31
Academic Common Market 9
Academic Review 39
Academic Second Opportunity 39
Accounting 17
Accounting and Business Law 96
Accreditation 9
Administration 4
Administrative Officers 8
Admission 31
Admission 31
Academically Talented High School Students 33
Application Process 32
Architecture 32
Articulation Agreements 32
Deadlines for Applications 33
Exceptions to Admissions 33
Fee Classification for the Purpose of Paying 33
Fees for Sponsored International Students 32
Freshman 31
Freshman Early-Admission 33
High School Units 32
International Student 32
Non-Degree Student 33
Re-Entry Student 33
Readmission 33
Requirements for 31
Senior and Disabled 33
Transfer 32
Visiting Student 33
Advanced Placement Examinations 31
Advanced Studies 139
Biomedical Sciences, Graduate School of 139
Comparative and Experimental Medicine Joint Graduate 140
Degree Programs, Majors and 141
Energy, Environment, and Resources Center 140
Graduate School, The 139
Law, College of 139
Majors and Degree Programs 141
Space Institute 140
Transportation Center 140
Veterinary Medicine, College of 139
Water Resources Research Center 140
Advertising 101, 145
Advising, Academic 36
Aerospace Engineering 116, 160
Aerospace Engineering, Mechanical and 115
African and African-American Studies 73, 81, 145
Minor 81
Agricultural and Extension Education 50
Agricultural Economics and Business Curriculum 49
Agricultural Economics 49
Agricultural Economics and Rural Sociology 49
Agricultural Education 50
Agricultural Engineering 50, 111, 146
Agricultural Engineering Technology 51, 147
Agricultural Extension Education 50
Agricultural Sciences and Natural Resources, College of 48
Agricultural and Extension Education 50
Agricultural Economics and Business Curriculum 49
Agricultural Economics and Rural Sociology 49
Agricultural Education 50
Agricultural Engineering 50
Agricultural Engineering Technology 51
Biological Engineering Concentration 51
Food Engineering Concentration 51
Agricultural Engineering Curriculum 51
Agricultural Extension Education 50
Animal Science 52
Pre-Veterinary Medicine Program 53
Production/Management Concentration 52
Science/Technology Concentration 52
Course Load 49
Curricula 48
Curriculum, Selection of 49
Doctoral Programs 48
Entomology and Plant Pathology 52
Facilities 49
Food Science and Technology 53
Forestry, Wildlife and Fisheries 54
Forest Resources Management Concentration 54
Forestry 54
Wildland Recreation Concentration 54
Wildlife and Fisheries Science 55
Wood Utilization Concentration 54
Graduate Study 48
Independent Study 49
Master of Science Programs 48
Minimum Requirements for Baccalaureate Degree Program 49
Optional Minors 49
Ornamental Horticulture and Landscape Design 55
Business Concentration 57
Science Concentration 57
Technology Concentration 57
Other Specialty Areas 56
Plant and Soil Science 57
Environmental Science and Natural Resources Concentration 57
Satisfactory/No Credit Courses 48
Traditional OHLD Career Specialties 55
Transfer Students 49
Agriculture 49
Air Force Aerospace Studies 147
Air Force, Department of 137
American Studies 73, 81
Minor 81
Ancient Mediterranean
Civilizations 73, 81, 147
Minor 81
Animal Science 52, 147
Anthropology 73, 148
Progression Standards 73
Application Fee 16
Applications, Priority Date for 18
Architecture 149
Architecture and Planning, College of 58
Course Load 60
Curriculum 59
Deadlines for Applications 59
Facilities 58
Financial Assistance 58
Five Year Program 59
For The Non-Architecture Major 59
Fourth Year Prerequisites 60
Freshman Admission Requirements 58
General Information 58
Lectures and Exhibits 59
Opportunities For Foreign Study 60
Planning, Graduate School of 60
Profession’s Participation in the School 60
Publications 59
Satisfactory/No Credit Courses 60
Second Year Prerequisites 60
Service Practicum Requirement 59
Special Programs 59
Third Year Prerequisites 60
Transfer Students 59
Archives, University 134
Army ROTC 136
Arrowmont Pi Beta Phi School of Arts and Crafts 74, 153
Art 12, 73, 150
Art Arrowmont Pi Beta Phi School of Arts and Craft 74, 153
Art Education 107, 153
Art History 74
Minor 74
Articulation Agreements 32
Arts and Sciences, College of 61
African and African-American Studies 73, 81
Minor 81
American Studies 73, 81
Minor 81
Ancient Mediterranean
Civilizations 73, 81, 147
Minor 81
Anthropology 73
Progression Standards 73
Areas of Concentration 65
Art 73
Asian Studies 74, 81
Minor 82
Astronomy 74
Astronomy, Physics and 89
Audiology and Speech Pathology 75
Bacteriology 75
Basic Skills 62
Architecture 149
Biochemistry 75
Biology, Division of 75
Botany 75
Cellular and Molecular Botany 76
Organismal Botany 76
Business Minor for Non-Business Students 65
Capstone Experience 65
Chemistry 76
Cooperative Program 77
Minor 77
Placement in General Chemistry
Sequences 77
Chinese 77
Cinema Studies 82
Minor 82
Classics 77
Greek 77
Latin 77
College Scholars Honors 92
College Scholars Program 66
Comparative Literature 77, 82
Minor 82
Computer Science 77
Course Load 72
Degrees Offered 61
Bachelor of Arts 61
Bachelor of Fine Arts 62
Bachelor of Music 62
Bachelor of Science 61
Requirements for Degrees 62
Distribution 62
East European Studies, Russian and
83
Ecology 78
Economics 78
Honors 78
Honors, Economics 78
English 78
Certification for Teaching 79
Graduate Study 79
Honors 79
Individualized Program 79
Literature Concentration 79
Minor 79
Writing Concentration 79
Environment and Society
Concentration 92
Minor 92
Environmental Studies 82
French 79
Language and World Business 91
Minor 91
Geography 79
Minor 79
Geological Sciences 79
Engineering Geology 79
Honors 79
Minor 79
German 80
Language and World Business 80
Minor 80
Germanic and Slavic Languages 80
Greek 80
Minor 77
Hebrew 80
History 80
Honors 81
Minor 81
Independent Study 73
Individualized Program 66
Interdisciplinary Programs 81
Italian 83
Language and World Business 91
Minor 91
Japanese 83
Latin 77, 83
Minor 77
Latin-American Studies 82, 83
Minor 82
Linguistics 82, 83
Minor 83
Lower Division—Upper Division 72
Mathematics 83
Honors 84
Minor 84
Medical Biology/Memorial Research
Center 84
Medical Technology 84
Medieval Studies 83, 84
Minor 83
Microbiology 84
Honors 84
Music 84
Music Education-Instrumental
Emphasis 85
Music Education/Vocal-General/
Vocal Emphasis 86
Music Education/Vocal-General/
Vocal Emphasis (4 year) 86
Organ and
87
Piano 87
Piano Pedagogy and Literature 87
Sacred Music (Organ or Voice) 87
Strings 87
Studio Music and Jazz 88
Theory/Composition 88
Voice 88
Woodwind, Brass and Percussion
Instruments 88
Music Education 89
Music Education-Instrumental
Emphasis (4 year alternate) 86
Music Education-Vocal/General
Concentration Keyboard 86
Off-Campus Study 72
Optional Minors 65
Optional Multiple Majors 65
Organizational Psychology
Program 88
Minor 89
Physics and Astronomy 89
Minor 89
Political Science 89
Honors 89
Minor 89
Public Administration
Concentration 89
Pre-Professional
Science-Medical Technology
Curriculum 72
Pre-Professional Programs 66
Nuclear Medicine Technology 67
Pre-Dental Program 66
Pre-MBA Program 66
Pre-Medical Program 67
Pre-Pharmacy Programs 68
Science-Medical Technology
Curriculum 72
Pre-Teaching
Arts 69
Environmental Science 68
Ideas and Values 70
Language Arts 70
Mathematics 69
Mathematics and Science 69
Multicultural Studies 71
Science 69
Science and Mathematics
Options 68
Social Studies 71
United States Culture 71
Pre-Teaching Humanities Options:
Bachelor of Arts 69
Pre-Teaching Programs for
Prospective K-8 Teachers 68
Pre-Teaching Social Science Options:
Bachelor of Arts 71
Pre-Veterinary Medicine Program 71
Programs of Study 61
Psychology 80, 83
Academic 90
General Concentration 90
Minor 90
Psychology Program,
Organizational 88
Religious Studies 90
Minor 90
Student-Initiated Concentration 90
Required Major 65
Requirements for Degrees 62
Romance and Asian Languages 90
French 91
Italian 91
Portuguese 91
Spanish 91
Russian 80, 91
Law and World Business 80
Minor 80
Russian and East European
Studies 83, 91
Satisfactory/No Credit 72
Slavic Languages, Germanic and
90
Sociology 91
Criminal Justice Concentration 92
Environment and Society
Concentration 92
Minor 92
Spanish 92
Law and World Business 91
Speech Communication 92
Minor 92
Speech Pathology, Audiology and
75
Statistics 92
Minor 92
Study Abroad and Foreign Study
Courses 73
Supplementary Elective Courses 66
Theatre 92
Minor 92
Urban Studies 83, 92
Minor 93
Women's Studies
Minor 83
Women's Studies 83, 92
Zoology 92
Minor 93
Asian Languages 153
Asian Studies 74, 81, 153
Minor 82
Astronomy 74, 153
Astronomy, Physics and 89
Athletics 10
Audiology and Speech
Pathology 75, 154
Auditing Courses 39
Social Work 41
Veterinary Medicine 41
Dental Program, Pre- 66
Department of Conferences 142
Department of Independent Study 143
Department of Military Science and Tactics 136
Deviation from Catalog Rules 37
Dining Services Facilities 13
Disability Services 13
Division of Biology 75
Dropped Courses, Tuition/Fee Assessment Policy for 17

E

Early Childhood Education Teacher Licensure 121
East European Studies, Russian and 83
Ecology 78, 159
Economics 78, 96, 159
Minor 78
Education 159
Education, College of 103
Admission To Teacher Education 104
Boards of Admission 104
Business/Marketing Education Teaching Concentration 123
Business/Marketing Education Training Concentration 124
Collaborative Programs 103
Counselor Education and Counseling Psychology 106
Course Load 108
Course Substitutions 106
Cultural Studies in Education 106
Curricula 107
Art Education 107
Elementary Education 107
Exercise Science 107
Human Services 107
Secondary Education 107
Special Education: Education of the Hearing Impaired 108
Special Education: Modified and Comprehensive Concentration 108
Sport Management 108
Education in the Sciences, Mathematics, Research, and Technology 106
Exercise Science 106, 107, 167
Grades in Major Courses 105
Holistic Teaching/Learning 106
Inclusive Early Childhood Education 106
Language, Communication, And Humanities Education 106
Licensure 105
Minors 105
Program Progression 104
Progression to Student Teaching or Internship 104
Progression Toward Degree Completion and/or Licensure 103
Progression Toward Degree Completion in Non-Teaching 105
Psychoeducational Studies 106
Rehabilitation and Disability 106
Satisfactory/No Credit Courses 105

Sport and Physical Activity 107
Education in the Sciences, Mathematics, Research, and Technology 106, 159
Educational Advancement Program, The 119
EEOTITLE X/AA/SECTION 504 STATEMENT 2
Electrical and Computer Engineering 112, 116, 161
Elementary Education 107
Employment Service, Student 19
Employment, Student 19
Energy, Environment, and Resources Center 140
Engineering Aerospace 160
Engineering Basic 160
Engineering Chemical 160
Engineering Civil and Environmental 160
Engineering, College of 109
Academic Common Market 116
Advising 110
Aerospace Engineering 116
Aerospace Engineering, Mechanical 115
Agricultural Engineering 111
American History Requirement 111
Biomedical Engineering Concentration, Engineering 117
Chemical Engineering 112, 116
Civil and Environmental Engineering 112
Civil Engineering 116
Computer Engineering, Electrical and 112, 116
Cooperative Engineering Program 109
Correspondence Courses 110
Course Load 110
Curricula 110, 116
Electives and Substitutions, Approval of 111
Electrical and Computer Engineering 112, 116
Engineering Management 114
Engineering Physics 113, 117
Engineering Science and Mechanics 113, 117
Engineering Science: Biomedical Engineering Concentration 117
Environmetal Engineering 114
Environmental Engineering, Civil and 112
Facilities 109
Freshman Year 116
General Requirements 110
Graduate Program 110
Humanities and Social Science Electives 110
Industrial Engineering 114, 117
International Engineering Program 110
Late Drop Requests 110
Materials Science and Engineering 114, 117
Mechanical and Aerospace Engineering 115
Mechanical Engineering 117
Mechanics, Engineering Science and 113, 117
Minor, Designation of a 110
National Accreditation 110
Nuclear Engineering 116
Nuclear Engineering Concentration 117
Nuclear Engineering: Radiological Engineering Concentration 118
Physics, Engineering 113, 117
Radiological Engineering Concentration, Nuclear En 118
ROTC Program, The Voluntary 111
Satisfactory/No Credit Course 110
Second B.S. Degree 110
Social Science Electives, Humanities and 110
Tau Beta Pi National Headquarters 109
Technical Electives 111
Transfer Credit 110
Transfer Students 110
Engineering Electrical and Computer 161
Engineering Geology 79
Engineering Industrial 162
Engineering Management 114
Engineering Materials Science 163
Engineering Mechanical 164
Engineering Nuclear 164
Engineering Physics 113, 117
Engineering Science and Mechanics 113, 117
Engineering Science: Biomedical Engineering Concentration 117
English 78, 165
Certification for Teaching 79
Graduate Study 79
Honors 79
Individualized Program 79
Literature Concentration 79
Minor 79
Writing Concentration 79
English Language Institute 142
Entomology and Plant Pathology 52, 167
Environment and Society 92
Environmental Engineering, Civil and 112, 160
Environmental Studies 82
Evaluation 38
Exercise Science 106, 107, 167
Expenses and Fees 15

F

Facilities 10
Failure to Meet Progression Requirements 37
Family Studies, Child and 156
Family Studies Major 120, 121
Federal Supplemental Educational Opportunity Grant 18
Federal Work-Study 19
Fee Classification 33
Regulations for in-state/out-of-state 34
Fee Classification for the Purpose of Paying Fees 33
Fee Costs 16
Application Fee 16
Auditor's Fee 16
Special Requirements for Student-Athletes
Teacher Certification 38
University Students 38
Writing Competence 38
Writing Deficiency 38
General Requirements for a Bachelor's Degree 40
Geography 79, 169
Minor 79
Geological Sciences 79
Engineering Geology 79
Honors 79
Minor 79
Geology 170
German 80, 171
Language and World Business 80
Minor 80
Germanic and Slavic Languages 80
Government Association, Student 15
Grades 32
Grades That Do Not Influence Grade Point Average 35
Graduate School Grades 36
Incomplete 35
Law School Grades 36
Repeating Courses 36
Satisfactory/No Credit Grading System 35
Undergraduate Grades 35
Graduate School 139
Graduate School of Biomedical Sciences 139
Graduated Late Payment Fee 16
Graduating Senior Privileges 37
Grant
Federal Pell 18
Federal Supplemental Educational Opportunity 18
Grants, Scholarships and 18
Graphic Design/Illustration 74
Greek 77, 80, 171
Minor 77
H
Health 171
Health Education: Community Health Education 122
Health Insurance, Student 17
Health, Leisure and Safety Sciences 121, 122
Health, Leisure and Safety Studies, Health 121, 122
Minors 120
Nutrition 121, 124, 125
Nutrition Majors 120
Pods 122
Progression Requirements 119
Recreation and Leisure Studies 122
Private Commercial Concentration 122
Therapeutic Concentration 122
Restaurant Administration, Hotel and 125
Retail and Consumer Sciences 121, 126
Retail and Consumer Sciences Major 120
Safety Sciences, Health, Leisure and 121, 122
Sport Management 120, 123
Loan
Perkins, Federal 18
PLUS Program 18
Stafford Loan Program 18
The University of Tennessee
Student 18
Loans
Student 18
Logistics and Transportation 98, 178
Lower Division—Upper Division 72
Maintenance Fee 16
Majors, Minors and Concentrations 44
Management 97, 178
Management Science 179
Management Science Programs 97
Map 6, 7
Marketing 98, 179
Marketing, Logistics, and Transportation 98
Materials Science and Engineering 114, 117
Materials Science Engineering 163
Mathematics 83, 179
Honors 84
Minor 84
Maximum Hours Per Term 38
Maximum Hours Per Term For Summer 39
MBA Program, Pre 66
McNair, Ronald Post-Baccalaureate Achievement Program 13
Mechanical and Aerospace Engineering 115
Mechanical Engineering 117, 164
Mechanics, Engineering and 117
Mechanics, Engineering Science and 113, 164
Medical Biology 180
Medical Biology/Memorial Research Center 84
Medical Program, Pre 67
Medical Technology 84, 180
Medieval Studies 83, 84, 180
Minor 83
Microbiology 84, 181
Honors 84
Military Science 181
Military Science Curriculum 137
Minimum Class Size 38
Minority Student Affairs, Office of 14
Minors and Concentrations, Majors 44
Museum, Frank H. McClung 12
Music 12, 84
Music Education-Instrumental 85
Music Education-Instrumental Emphasis 86
Music Education-Vocal/General Concentration/Keyboard 86
Music Education-Vocal/General/Vocal Emphasis (4 year) 86
Organ 87
Piano 87
Piano Pedagogy and Literature 87
Sacred Music (Organ or Voice) 87
Strings 87
Studio Music and Jazz 88
Theory/Composition 88
Voice 88
Woodwind, Brass and Percussion Instruments 88
Music Education 85, 181
Music Education-Vocal/General Concentration/Keyboard 86
Music Education-Vocal/General/Vocal Emphasis 86
Music Education-Vocal/General/Vocal Emphasis (4 year) 86
Music Ensemble 182
Music General 182
Music History 182
Music Instrument 182
Music Jazz 182
Music Keyboard 183
Music Performance 183
Music Theory 183
Music Voice 183
N
News-Editorial Concentration 101
Neyland Stadium 10
Non-Credit Community Programs 143
Nontraditional Student 14
Nuclear Engineering 116, 164
Nuclear Engineering Concentration 117
Nuclear Engineering: Radiological Engineering Concentration 118
Nuclear Medicine Technology 67, 183
Nursing 184
Nursing, College of 127
Continuation Policies 128
Course Load 128
Curriculum 128
General Requirements 127
Grading and Continuation Policies 128
Graduate 128
Health and Insurance Requirements 128
Insurance Requirements 128
Progression Policies and Procedures 127
RN Track 128
Nutrition 121, 124, 125, 185
Oak Ridge Associated Universities (ORAU) 14
Ombudsman Office 14
Organismal Botany 76
Organizational Psychology Program 88
Organizations, Student 15
Orientation 16, 38
Ornamental Horticulture and Landscape Design 55, 185
Parking and Vehicle Operation 14
Pell Grant, Federal 18
Percussion Instruments, Woodwind, Brass and 88
Perkins Loan 18
Pharmacy Programs, Pre- 68
Phi Kappa Phi Annual Faculty Lectures 10
Theatre 11, 92, 195
  Minor 92
Theory/Composition 88
Thompson-Boling Assembly Center and
  Arena 10
Transportation Center 140
Transportation, Logistics and 98, 178
Tuition 16
Tuition Payment Plans 16

U
Undergraduate Retention Standards 39
  Academic Review 39
  Academic Second Opportunity 39
  Transfer Students 39
University Archives 134
University Evening School 143
University Honors 132, 196
  Chancellor’s Scholars Program 132
  Retention in Tennessee Scholars
    Program 132
  Senior Project
    Deadlines Program 133
  Tennessee Scholars Program 132
  University Honors Courses 133
  Whittle Scholars Program 132
University Libraries 134
University Programs And Services
  Fee 16
University Students 38
University Studies 135, 196
University, The 9
  Historical Background 9
  Student Affairs and Services 9
Urban Studies 83, 92, 196
  Minor 83

V
Vehicle Operation and Parking 14
Veterinary Medicine 139
Veterinary Medicine Program, Pre 71
Voice 88

W
Water Resources Research Center 140
Whittle Scholars Program 132
Wildlife and Fisheries, Forestry 168
Wildlife and Fisheries Science 55, 196
Withdrawing from the University 39
Women’s Center 15
Women’s Studies 83, 92, 197
  Minor 83
Woodwind, Brass and Percussion
  Instruments 88
Work-Study, Federal 19
Writing Center 15
Writing Competence 38
Writing Deficiency 38

Z
Zoology 92, 197
  Minor 93