ACCOUNTING (009)

201 Principles of Financial Accounting (3) Introduction to financial accounting theory and practice with emphasis on preparation and reporting of financial information. Prerequisite to all other courses in accounting. Prereq: Mathematics 110 or 121. E

202 Principles of Managerial Accounting (3) Introduction to managerial and cost accounting concepts with emphasis on uses of accounting data by managers in planning operations, controlling activities, and decision making. Prereq: 201. E

311-312 Intermediate Financial Accounting (3,3) Theory, principles, and procedures related to valuation of assets, liabilities and equities; measurement of periodic income; and preparation of financial statements. Prereq: 202 for 311; and 311 with a grade of C or better and Management 303 for 312. E

321 Cost and Managerial Accounting (3) Analysis of costing for products, projects, and management control. Topics include cost behavior, cost prediction, budgeting, and responsibility accounting. Prereq: 202, or Coreq: Management 303. E

341 Accounting Information Systems (3) Development and use of accounting information systems for collection, organization, and distribution of economic information about organizations for internal and external decision making. Prereq: 321, Management 303, junior standing. Major exam may be given during the last class meetings. F, Sp

400 Special Topics (3) Critical consideration of selected current topics. May be selected from managerial, cost, financial, systems or auditing. May include written reports and cases. Prereq: 312, 321, and 341 and consent of instructor. E

411 Auditing (3) Role of auditing in society, operational auditing, professional auditing standards, auditor's legal responsibilities, audit evidence and reporting, role of internal control and statistical sampling in auditing, applications to specific transaction cycles. Prereq: 312 with a C or better, 341. F, Sp

414 Advanced Accounting (3) Issues and alternatives in advanced theory and problem areas including financial accounting theory, partnership accounting, business combinations, consolidated financial statements, and not-for-profit accounting. Major writing requirement. Prereq: 312 with a C or better, F, Sp

431 Federal Income Taxation (3) Fundamentals of gross income, deductions, credits, and tax determination. Introduction to taxation of corporations and partnerships. Prereq: 311 with a C or better, or consent of instructor. E

ADVERTISING (012)

250 Advertising Principles (3) Survey of the role of advertising in American business, relationship between advertising and marketing; functional components of the advertising process: research, media, creative, and management. Prereq: 340 with a grade of C or better.

340 Advertising Research Methods (3) Secondary data and primary research techniques for advertising decisions. Prereq: 250 with a grade of C or better and Statistics 201.

350 Advertising Creative Strategy (3) Basic concepts of creative strategy with intensive practice in developing, writing, and designing advertisements, and judging creative work. Prereq: 250 with a grade of C or better.

360 Advertising Media Strategy (3) Assessment of markets, audience and mathematical techniques for advertising planning. Instruction in media planning, buying, and evaluation. Prereq: 340 with a grade of C or better.

380 Advertising Professional Seminar (1) Exploration of career choices in mass communications. Prereq: 250 and 350, junior standing. F

450 Advertising Management (3) Case study approach to advertising decisions. Data analysis and interpretation, generating alternative strategies, oral and written presentation of recommendations. Prereq: 350 and 360 with grades of C or better. Open to marketing seniors in the College of Business Administration with consent of Head of Department of Advertising.

470 Advertising Campaigns (3) Group-based development, execution and evaluation of an advertising campaign for a regional or national client. Prereq: 450 with a grade of C or better.

490 Special Topics (3) Detailed study of a specialized area of advertising. Topics vary by semester and include advanced media strategy, advanced creative strategy, direct marketing, advertising and social issues.

492 Advertising Practicum (1) Experience in a functional area of advertising. Ten hours laboratory each week. May be repeated once. Prereq: Progression as a major in the Department of Advertising.

493 Independent Study (1-3) Individual study in a specialized area under the supervision of a faculty member. Prereq: Consent of instructor.

AFRICAN AND AFRICAN-AMERICAN STUDIES (022)

201 Introduction to Afro-American Studies (3) Multidisciplinary approach to the Afro-American experience through the Civil War period which examines such issues as traditional African societies, the institution of slavery, the development of Afro-American culture, the beginnings of Afro-American protest tradition, and the Civil War and Reconstruction.

202 Introduction to Afro-American Studies (3) Multidisciplinary approach to the Afro-American experience from the Civil War through the Civil Rights era which focuses on such topics as Afro-American rural and urban societies, the Afro-American church and education and Afro-American intellectual and protest movements.

310 Introduction to Afro-American Music (3) (Same as Music History 310.)

314 Peoples and Cultures of Africa (3) (Same as Anthropology 314.)

315 Afro-American Anthropology (3) (Same as Anthropology 315.)

319 Caribbean Cultures and Societies (3) (Same as Anthropology 319 and Latin American Studies 319.)

322 Minority Group Politics in the United States (3) (Same as Political Science 322.)

343 Race and Ethnicity (3) (Same as Sociology 343.)

350 History of Jazz (3) (Same as Music History 350.)

352 Afro-American Religion in United States (3) (Same as Religious Studies 352.)

353 Topics in Afro-American Religion (3) (Same as Religious Studies 353.)

364 Contemporary Issues in Afro-American Education (3) 1954 to the present. Examines issues related to the current dilemma of providing quality education for the Afro-American student including professional school quotas, intelligence testing, homogeneous grouping, Afro-American college survival, busing, Black English/Standard English controversy. Writing emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom. (Same as Curriculum and Instruction 364.)

371-372 African History (3,3) (Same as History 371-372.)

373 African Religions (3) (Same as Religious Studies 373 and Anthropology 373.)

379 Geography of Africa (3) (Same as Geography 379.)

420 Families: Race, Class and Culture (3) (Same as Child and Family Studies 420.)
421 Comparative Studies in African and Afro-American Societies (3) Comparative studies of African and Afro-American societies in such areas as education, religion, and family. Includes the respective views of various African-Americans and Africans of each other and the concept of Pan-Africanism. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom. (Same as History 421.)

429 History and Philosophy of Afro-American Education (3) Focuses on attempts by Afro-Americans to secure an equal status for themselves and their children: from the era of slavery to the Supreme Court decision in 1954. Examines black perceptions of the importance of education and special obstacles confronting Blacks who seek education on the primary, secondary, collegiate, and graduate level. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

431 Research Seminar in Afro-American Studies (3) Teachers basic research approaches to the research process and development of research skills. Students design and implement a research project of their choice in the field of Afro-American Studies. Prereq: 201-225 and senior standing. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

442 Comparative Poverty and Development (3) (Same as Sociology 442.)

445 The Afro-American Experience From the Colonial Period to the Present (3) (Same as History 445.)

450 Issues and Topics in Afro-American Studies (3) Topics vary, but include a variety of problems, issues, and individuals from the field of Afro-American Studies. May be repeated. Maximum 6 hours.

452 Black African Politics (3) (Same as Political Science 452.) May be repeated. Maximum 6 hours.

456 Agricultural Experience, Leadership and Adult Programs (3) Developing supervised agricultural experience programs, conducting leadership development activities through the Future Farmers of America. Role and methods for adult education in agriculture. F

346 Strategies for Teaching and Program Planning in Agriculture (3) Methods and techniques for teaching agriculture, preparing teaching plans and courses of study, and developing programs of activities for agriculture. F

411 Fundamentals of Agricultural Extension (3) History, philosophy, organizational structure; clientele served, major areas of program emphasis-teaching methods, and relationships with other educational agencies. Sp.


492 Agricultural and Extension Education Internship (2-8) Supervised work experience in approved county Extension offices, agricultural businesses, or agriculture related agencies. Requires living off-campus for a specified time. Prereq: 411 and consent of instructor. Sp, Su.

493 Independent Study (1-3) Individualized study of a special project or problem in Agricultural and Extension Education. Must be selected in consultation with the instructor. Prereq: Consent of instructor. May be repeated for credit. Maximum 6 hours. E

AGRICULTURAL ECONOMICS (047)

110 Orientation to Agricultural Economics and Business (1) Primarily for Agricultural Economics and Business majors in their first year. Introduction to current issues, subject matter areas, and career opportunities in the field of agricultural economics and business. F

210 Introduction to Agricultural Economics (3) Application of economic principles of demand, supply, price determination, and market structure to agriculture, natural resource, rural community development, and international trade and development. Economistic aspects of current issues and problems associated with production, marketing, consumption, resource use, and government intervention in the agricultural, rural, and international sectors. Prereq: Economics 201. F, Sp.

342 Farm Business Management I (3) Principles and procedures for determining most profitable farm organization and system of operation: nature of managerial processes, farm record keeping, and income analysis. F

350 Marketing of Agricultural Products (3) Survey of U.S. food and fiber marketing system: marketing functions, industry structure, market channels, marketing options of farmers; basic analysis of marketing problems. Prereq: 210 or consent of instructor. F

352 Commodity and Financial Futures Markets (3) Commodity and financial futures and options: history, functions, and organizational characteristics common to most futures markets. Special topics on risk management, hedging, and the economics of futures trading. Prereq: Economics 201 and Junior standing. F

359 Applied Agricultural Economics (3) Application of economic principles to problems facing rural communities. Emphasis on farm management, marketing, public policy, and resource use. Prereq: Economics 201 and Junior standing. F

410 Seminar in Agricultural Economics and Business (1) Primarily for graduate Agriculture and Business majors in their senior year. Analysis of contemporary problems in the field. Discussion of career objectives, placement procedures, and placement process. Assignments for written and oral presentation. F

412 Agricultural Finance (3) Macro-finance, financial objectives, acquisition of debt and equity funds, capital investments, capital allocation, debt repayment, credit analysis, borrowing, and loan pricing; insurance strategies; computer applications, kinds and sources of agricultural credit, and financial intermediation. Prereq: Economics 201; Junior standing or consent of instructor. F

430 Agricultural and Trade Policy (3) Values, goals, and policy process; historical development and current characteristics of commodity, credit, food, and trade policy; relationship between domestic and international agricultural policy. Prereq: 210 or consent of instructor. Sp.


442 Farm Business Management II (3) Advanced techniques and methods for farm business analysis using micro and macroeconomic principles and tools, including applications in farm planning; spreadsheet analysis of whole farm business, systems analysis and management; decision making and risk analysis; farm equity management; farm growth and intergenerational transfer. Prereq: 342. Sp.

450 Agricultural Price Analysis (3) Demand and supply mechanisms in agriculture; price determination; spatial equilibrium; temporal price patterns; pricing institutions, Prereq: 350, Economics 311 and Statistics 302. F


460 Rural Economic and Community Development (3) Historical and theoretical perspective on problems facing rural communities; economic interactions between farm and nonfarm sectors; models and policies for analyzing rural development. Prereq: 210 or consent of instructor. F

470 Natural Resource Economics (3) Nature of natural resource; economic efficiency as a basis for natural resource use; externalities in natural resource use; factors influencing environmental quality; alternative public policy tools for influencing natural resource use or improving environmental quality. Prereq: 210 or consent of instructor. Sp.

492 Off-Campus Internship (1-3) Supervised experience at department-approved internship site. May be repeated up to a maximum of 3 hours. Prereq: Junior standing. S/N/C. E.

493 Independent Study (1-3) Directed individual or team research and report writing. Off-campus intern experience and reporting. Special courses in specific topics. Student must arrange with instructor before registering. May be repeated. Maximum 6 hours. Prereq: Junior standing. E

AGRICULTURAL ENGINEERING (066)

105 Fundamentals of Engineering in Bio-Resource Systems (2) Application of basic engineering principles as related to bio-resources; problem solving and reporting techniques; engineering tools; measurement techniques. Not available for credit if credit has previously been received for Basic Engineering 131. 1 hour and 1 lab. F

200 Career Opportunities (1) Activities and opportunities in the fields of specialization; required training for job; projected career activities. 1 hour. F


311 Processing Food and Biological Materials (3) Application of basic engineering sciences to processing and handling of biological materials: physical properties, thermal processing, drying, refrigeration, freezing and storage; economic analysis and processing. Prereq: Engineering Science and Mechanics 341, Agricultural Engineering 303. 2 hours and 1 lab. F

320 Structures and Environment (2) Environmental control systems: indoor air quality; building envelope; heat loads and insulation; functional requirements of agricultural buildings; material selection and cost. Prereq: Junior standing. 1 hour and 1 lab. Sp.

331 Power Units and Machinery (3) Internal combustion engines and off-road vehicle power transmission.
systems. Ergonomics and operator environment. Functional and structural analysis and performance characteristics of machinery. Prereq: Mechanical Engineering 331 and Engineering Science and Mechanics 321. 3 hours and 1 lab. F


400 Professional Development (1) Engineering ethics; professionalism and preparation for professional development and continuing education. 1 hour. F

403 Engineering Design Fundamentals (3) Nature of design, functional analysis, creativity, analyses and synthesis; geometric and kinematic requirements, plane mechanisms, force, stress, deflection, time analyses applied to design project. Prereq: Senior standing. Design content: 3 hours. 1 hour and 2 labs. F

413 Component Design and Machine Synthesis (3) Synthesis of design; structural, kinematic, power, control-system characteristics; selection, operation, adjustment, troubleshooting and repair of single-cylinder engines. Prereq: Physics 121 or consent of instructor. 2 hours and 1 lab. F

422 Food and Process Engineering Technology (3) Agricultural machinery and tractor systems; adaptation to agricultural practices; management considerations; field efficiencies; capabilities; adjustment and servicing. Prereq: Mathematics 121. 2 hours and 1 lab. F

432 Agricultural Machinery and Tractors (3) Agricultural machinery and power units; adaptation to agricultural practices; management considerations; field efficiencies; capabilities; adjustment and servicing. Prereq: Mathematics 121. 2 hours and 1 lab. Sp

442 Agricultural Waste Management and Pollution Control (3) Waste renovation fundamentals; characteristics of animal manure; nutrients, transport, storing, and utilizing livestock waste. Prereq: Mathematics 121. 2 hours and 1 lab. F

452 Small Internal Combustion Engines (3) Theory, concepts and mechanics of small internal combustion engines; theoretical analysis, selection, operation, adjustment, troubleshooting and repair of single-cylinder engines. Prereq: Physics 121 or consent of instructor. 2 hours and 1 lab. Sp

462 Agricultural Chemical Application Technology (3) Equipment for application of liquid, solid, and gaseous agricultural chemicals; system components; operational characteristics; calibration; selection and management; safety considerations; materials handling and disposal methods. Prereq: Physics 121 or consent of instructor, 2 hours and 1 lab. Sp

Agriculture (088)

101 Perspectives in Agriculture and Associated Natural Resources (3) Historical development, current national and international issues, and trends for the future. 3 hours.

200 Microcomputers in Agriculture and Natural Resources (1) Microcomputer technology as related to agricultural applications. Topics include: microcomputer terminology, architecture, computer peripherals, operating systems, and an overview of application software.

301 Microcomputer Applications in Agriculture and Natural Resources (2) Advanced topics in microcomputer applications for agriculture including system organization and selection, communications, data base management, electronic spreadsheets, project management, and other application software. Prereq: Agriculture 200. 1 hour and 1 lab.

302 Special Topics in Computer Applications for Agriculture and Natural Resources (1) Content varies. May be repeated for a maximum of 3 hours. Request approval for variable title on transcript.

317 Agriculture and Natural Resources Honors Seminar (1) Discussion of selected topics, issues and problems in agricultural, environmental, and natural resource systems. Primarily for College Scholars students. May be repeated. Maximum of 8 hours. Satisfactory/No Credit. F, S.

480 Agricultural Management Systems Analysis (3) Integration of a research management oriented course for the application of systems analysis concepts to planning and operation of farm business. Team work; application of technical knowledge to a practical farm situation and evaluation of interrelationships among various subsystems. Open to juniors and seniors by invitation only.

Air Force Aerospace Studies (094)


103-104 Leadership Laboratory (1,1) Initial leadership experiences and orientation to active duty. Instruction is: drill and ceremonies; Air Force uniforms, customs, and courtesies; the Air Force as a profession; and the environment in which the Air Force officer works. Coreq: 101-102. Satisfactory/No Credit only.

201-202 Air Force Aerospace Studies (1,1) Introduction to study of air power from a historical perspective starting before the Wright Brothers and continuing into the 1980's.

203-204 Leadership Laboratory (1,1) Intermediate leadership experiences and orientation to active duty.

Air Force standards, customs, and courtesies; the Air Force as a profession; the environment in which the Air Force interacts with the Army and Navy, providing foundation for study of the Armed Forces and the Air Force. Coreq: 201-202. Satisfactory/No Credit only.

205 Field Training (Academic Program) (1-4) Role of United States military forces in contemporary world, with particular attention to United States Air Force, its organization and mission, various component forces of U.S. military, organization of America's defense structure, policies of major powers, and elements and processes in making of defense policy. Conducted at Field Training bases throughout the country. Open only to two-year program applicants.

301-302 Air Force Aerospace Studies (3,3) Air Force leadership at junior officer level, including theoretical, professional, and legal aspects, with attention to communication skills, Military Leadership Functions, principles, and techniques. Prereq: Air Force ROTC approval and completion of either 205 or 101-104, 201-204. Coreq: 303-304.

401-402 Air Force Aerospace Studies (3,3) Role and function of professional officer in a democratic society; Socialization process, public attitudes, and value orientations associated with professional military service; requisites for maintaining national security forces; decision-making processes of Department of Defense; political, economic, and social constraints affecting formulation of military officer works; and preparation for field training. Coreq: Air Force ROTC approval and completion of 301-302. Coreq: 403-404.

American Studies (099)

310 Introduction to American Studies (3) Explores dynamics and nature of the culture(s) of the United States through interdisciplinary study and interpretation. Considers both "mainstream" and "minority" cultures. Writing emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

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

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

434 Race and Ethnicity (3) (Same as Sociology 343.)

435 Collective Behavior and Social Movements (3) (Same as Sociology 345.)

355 Religion and Culture in the United States (3) (Same as Religious Studies 355.)

380 American Issues: War and the Peaceful Ideal (3) (Same as History 380.)

381 Introduction to Folklore (3) (Same as English 381.)

410 Topics in American Culture (3) Content varies. May be repeated once.

420 Political Attitudes and Opinions (3) (Same as Political Science 420.)

440 America: Mind, Mood, and Society (3) (Same as History 440.)

442 American Humor (3) (Same as English 442.)

455 Local and Regional History (3) (Same as History 455.)

456 History of Sports in the United States (3) (Same as History 456.)

489 Freedom of Speech (3) (Same as Speech Communication 489.)

493 Independent Study (1-15)

American Studies (113)

101 Orientation to Animal Science (1) For Animal Science majors and Prevet students in their first year. Discussion of student services, activities, and careers; student participation in planning the college experience. Satisfactory/No Credit. F, Sp

220 Anatomy and Physiology of Farm Animals (3) Skeleton and joints; muscles; blood and microcircula-
tion; the nervous, endocrine, cardiovascular, respira-
tory, and digestive systems; demonstrations of physical-
chemical phenomena. Prereq: Biology 120. 2 hours and 1
lab. F

260 The Animal Industry and Market Evaluation (3) Structure and production principles of food animal and
horse industries. Focus on aspects of production and
marketing, including current issues and trends in beef,
cattle, dairy cattle, poultry, sheep, and swine. Use of
marketing and management. 2-3/hr labs. F, Sp

280 Farm Animal Management Practices (3) Integra-
tion of husbandry management practices into cattle,
horse, poultry, sheep, and swine enterprises. Applica-
tion of animal behavior knowledge, handling animals,
including facility design, housing, nutrition, reproduction,
dermination, pre- and post-natal care, identification,
dehorning, castrating, docking, implanting, dubbing,
foot care, fitting and gromming, record-keeping, productive
and milking management. 2-3/hr labs. F, Sp

320 The Physiology of Reproduction and Lactation (3) Biology of sex and sexual differentiation, functional
anatomy of male and female, reproduction and lactation,
gonadogenesis, neuroendocrinology and endocrinol-
ogy of reproduction, sex chromosome linkage, fertili-
genesis, ovulation, spermatogenesis, fertilization, em-
byronic development, implantation, pregnancy, parturi-
tion, establishment, systems of production, production prac-
tices, and hormone improvement programs. Management,
evaluated in terms of production response and economic
returns. Prereq: Consent of instructor. 2 labs. Satisfactory/No credit. F, Sp

461 Advanced Beef Cattle, Dairy Cattle, Horse, Poul-
try, Sheep and Swine Judging (1) Specialization in judging
of beef, dairy, beef cattle, dairy cattle, poultry, sheep,
and swine. Prereq: Consent of instructor. 1 hour and 1 lab. Sp

462 Dairy Cattle Production and Management (3) Integration of principles of nutrition, breeding, physiol-
ogy, and marketing into complete production and man-
gagement programs. Structure of industry, enterprise
establishment, systems of production, production prac-
tices, and hormone improvement programs. Management,
evaluated in terms of production response and economic
returns. Prereq: Completion of Animal Science sopho-
mores and junior core courses or consent of instruc-
tor. 2 hours and 1 lab. F

482 Beef Cattle Production and Management (3) Production principles of nutrition, breeding, physiol-
ogy, and marketing into complete production and man-
gagement programs. Structure of industry, enterprise
establishment, systems of production, production prac-
tices, and hormone improvement programs. Management,
evaluated in terms of production response and economic
returns. Prereq: Consent of instructor. 2 hours and 1 lab. F

495 Seminar (1) Review of literature and oral and
written presentation on special topics and current re-
search in Animal Science field. Prereq: Senior standing.
One 2 hour lab. F, Sp

496 Veterinary Medical Technology (1) For Animal
Science undergraduates. Includes management of spe-
ific species. For Animal Science MA and PhD students.
After completion of study, a written report is required and this report is
maintained on file in the reference room of the depart-
ment. May be repeated for a maximum of 6 credits.
Prereq: Junior standing and consent of instructor and
department head. E

495 Seminar (1) Review of literature and oral and
written presentation on special topics and current re-
search in Animal Science field. Prereq: Senior standing.
One 2 hour lab. F, Sp

ANTHROPOLOGY (122)

110 Human Origins (3) Survey of humanity’s back-
gerund, fossil primates, fossil human remains, and liv-
ing races of mankind.

120 Prehistoric Archaeology (3) Introduction to meth-
ods and techniques used in the reconstruction of prehis-
torical cultures, reconstruction of past lifeways and describe
cultural evolution. Overview of the prehistory of Africa, west-
ern Europe, and the Americas. Understanding of the
earliest dated human cultures to rise of complex civiliza-
tions.

130 Cultural Anthropology (3) Major concepts and meth-
ods in the study of culture; survey of cross-cultural
similarities and differences. Social and cultural orga-
ization, economic, political, and religious institu-
tions; language, ideology and arts. Contributions of
anthropology to resolving contemporary human prob-
lems.

210 Principles of Biological Anthropology (3) Mecha-
nisms of biological evolution and adaptation in living
and prehistoric humans. Prereq: 110.

220 Prehistory of Tennessee (3) History of archaeo-
logical research in Tennessee and survey of prehistoric
Indians from initial occupation of the state to
European contact.

302 Anthropology of Religion (3) (Same as Religious
Studies 302.)

306 Genetics and Society (3) (Same as Botany 306.)

310 North American Indians (3) Comparative over-
view of Indian cultures of North America. Topical cover-
ages range from prehistoric and aboriginal (wild)
to contact and historic (Euro-American). Writing-
emphasis course: at least one in-class essay exami-
nation and 3000 words of writing outside the classroom.

311 Southeastern Indians (3) Survey of Southeastern
American Indian cultures at the time of European con-
tact. Emphasis on Cherokee, Creek, and related soci-
cultural influences from European contact.

313 Peoples and Cultures of Mesoamerica (3) Pre-
Columbian and Hispanic cultures of Mexico, Guate-
malta, Belize, El Salvador and Honduras. Patterns of
social interaction and cultural changes throughout
Mesoamerica’s history. Prereq: 130 or consent of instruc-
tor. (Same as Latin American Studies 313.) Writing-
emphasis course: at least one in-class essay exami-
nation and 3000 words of writing outside the classroom.

313 Peoples and Cultures of Africa (3) Ethnographic
survey of peoples of sub-Saharan Africa, focusing on
racial diversity, human ecology, and contemporary
issues. Prereq: 130 or consent of instructor. (Same as
Afro-American Studies 313.) Writing-emphasis course:
at least one in-class essay examination and 3000 words of writing outside the classroom.

315 Afro-American Anthropology (3) Anthropological perspectives on lifestyles and cultural attitudes of persons of African descent in North America, South America, and the Caribbean. Prereq: 130 or consent of instructor. (Same as Afro-American Studies 315.) Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

316 Alcohol, Health and Culture (3) Socio-cultural perspectives and consequences of alcohol use/abuse in various cultural contexts. Prereq: 130 or consent of instructor. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

319 Caribbean Cultures and Societies (3) Anthropological approaches to key aspects of Caribbean history, socio-cultural pluralism, racial and class stratification, patterns of economic development, and local and national political processes. Prereq: 130 or consent of instructor. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

320 American Cultures (3) Anthropology in the study of our own society, including such topics as ethnic communities, social classes, power structures, etc. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom. Prereq: 130 or consent of instructor.

360 North American Prehistory (3) Prehistoric cultures of North America from initial occupation of the continent before Clovis, emphasizing cultural anthropological issues in various tribal, peasant, and complex societies. Prereq: 130 or consent of instructor. Maximum 6 hours. Prereq: Either 110, 120, 130 or consent of instructor.

361 Historical Archaeology (3) Historical archaeology of Euro-American, African-American, and Asian American cultures in the L5th century history of the United States. Prereq: 130 or consent of instructor.

362 Principles of Archaeology (3) Research strategies used in developing method and theory, construction of cultural histories, identifying site function and settlement subsistence patterns, and evaluating exaptations and explanations of cultural change. Prereq: 120 or consent of instructor.

373 African Religions (3) (Same as Religious Studies 373 and Afro-American Studies 373.) 400 Readings in Anthropology (1-6) Problem-oriented directed readings in anthropology. Prereq: Anthropology majors with senior standing or consent of instructor. May be repeated. Maximum 6 hours.

410 Principles of Cultural Anthropology (3) Exploration and illustration of major concepts, theories, and methods in cultural anthropology, with application to analysis of specific ethnographies. Prereq: 130.

411 Linguistic Anthropology (3) Basic linguistic concepts applied to analysis of the linguistic behavior of selected populations, particularly study of the relationship between language and culture. Prereq: 130 or Linguistics 200. (Same as Linguistics 411.)

412 Folklore in Anthropology (3) Introduction to anthropological study of folklore, using folklore and folklore materials from various tribal, peasant, and complex societies. Prereq: 130 or consent of instructor.

413 Dynamics of Culture (3) Definition and in-depth study of major forms of culture change, ranging from evolution and diffusion to religious revitalization and political revolt. Continuity and change in diverse cultural settings examined through use of archaeological, ethnographic, and contemporary cases. Prereq: 130.

414 Political Anthropology (3) Examination of the organization and dynamics of power and politics within both stateless and state-level societies. The role of symbols, rituals, and ideologies in producing and reproducing power relations. The relationship between actors (individual) and structures. The encapsulation of traditional political forms and systems within modern states. Prereq: 130 or consent of instructor. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom. Prereq: 130 or consent of instructor.

430 Fieldwork in Archaeology (3-9) Practicum work in archaeological field projects including group composition, size, and structure; patterns of mating; other social interactions; communication; and cultural behavior. Application of primate studies to human primate behavioral ecology. Prereq: 110 or consent of instructor.

431 Ethnographic Research (3) Conceptual and practical exploration of methods and techniques cultural anthropologists use in fieldwork. Prereq: 130 or consent of instructor.

435 Historical Archaeology Laboratory (3) Laboratory procedures for the processing, identification, and interpretation of artifacts from historical sites. Artifactual material from historic East Tennessee sites will be used for class projects. Prereq: 361 recommended.

440 Cultural Ecology (3) Concepts and methods in studying dynamic interactions between prehistoric and present day cultures and their environments. Topics include ecological theory, methods of analysis, and results of selected case studies. Prereq: 120, 130, 410, or consent of instructor.

450 Current Trends in Anthropology (3) Theoretical issues in anthropology for undergraduate students. Topics may include practical experience or laboratory study of anthropological methods. Prereq: 130. Maximum 6 hours. Prereq: Either 110, 120, 130 or consent of instructor.

459 Selected Topics in Anthropology (3) Theoretical issues in anthropology for undergraduate students. Topics may include practical experience or laboratory study of anthropological materials. Prereq: 130. Maximum 6 hours. Prereq: Either 110, 120, 130 or consent of instructor.

461 African Prehistory (3) African cultural history from the earliest evidence of human activity to the time of European contact. Emphasis on the stone age of Africa south of the Sahara. Prereq: 120 or consent of instructor. (Same as African-American Studies 460.) Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

462 Early European Prehistory (3) Origins and evolution of human culture in Europe through the beginnings of settled life. Primary focus on Paleolithic/Mesolithic chronology and lifeways. Prereq: 120 or consent of instructor. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

483 Rise of Complex Civilizations (3) Development of complex societies in Old World from origins of agricultural economics to rise of States. Focus on Mesolithic, Neolithic, and Metal Age lifeways in Africa, Europe, and Asia. Prereq: 120 or consent of instructor. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

484 Principles of Zoarchaeology (3) Basic osteological studies of major vertebrate groups, with emphasis on the aboriginal's use of animals in subsistence and culture. Identification and interpretation of archaeologically derived musculoskeletal and vertebrate remains. Prereq: 120 or consent of instructor. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

485 Urban Archaeology (3) Field archaeology and interpretation of archaeological remains on historic urban sites in the United States. Course content will include lectures and field and laboratory research on urban sites in East Tennessee. Prereq: 361 recommended.

486 Human Osteology (4) Intensive examination of the human skeleton. Prereq: 110 or consent of instructor. 3 hours and 1 hour lab.

487 Museum I: Museums, Purpose and Function (3) (Same as Art 481.)

488 Museum II: Exhibition Planning and Installation (3) (Same as Art 482.)

489 Museum III: Field Projects (1-12) (Same as Art 483.)


491 Foreign Study (1-15)

492 Off-Campus Study (1-15)

493 Independent Study (1-15)

494 Primate Behavior (3) Social organization and behavior of primates, including group composition, size, and structure; patterns of mating; other social interactions; communication; and cultural behavior. Application of primate studies to human primate behavioral ecology. Prereq: 110 or consent of instructor.

495 Human Paleontology, (4) Introduction to human fossil record from the earliest human remains to the earliest representative of modern human form. Prereq: 110.

496 Biology of Human Variability (3) Introduction to human populations; human adaptation, biological features of major human races, relationships of major groups to one another. Prereq: 110. (Same as Afro-American Studies 496.)

497 Human Response to Environmental Stress (3) Explores the physiological perception of stress from the physical environment and the physiological, anatomical, and behavioral responses to this stress.

ARCHITECTURE (133)

101 Introduction to Architecture (3) Scope and definition of architecture in relation to contemporary society, building industry, and allied design professions. Orientation to courses and programs of the school. F

102 Visual Design (2) Principles of visual design and techniques of representation. Coreq: 172. Sp

111 Architecture and the Built Environment (3) An introduction to architecture and the built environment for non-architecture majors. Significance of our surroundings and how that create the environment. Creative aspects of design. Survey of examples from local to global. Strategies for individual and collective involvement.

171 Design Fundamentals I (2) Definition, ideas, and processes of design. Sketch design studies and free-hand drawing. Introduction to drafting technique, graphic, and visual skill development. Coreq: 101. F


212 History of Architecture II (3) Architectural thought and ideas of building and community form. English Renaissance, late Renaissance in Italy. France and England from the mid-twentieth century. Prereq: 211. Sp


214 Computer Applications in Architecture (3) Survey of the role of the computer in architecture, its potentials and limitations. Recent developments in computer graphics with specific applications and demonstrated projects. F, Sp

215 Introduction to Architectural Technology (3) Place of building technology in architectural design. Introduces concepts and theory of structures; building materials and construction; and environmental controls. F, Sp


282 Second Degree Program: Design II (6) Principles of architectural design emphasizing building structure and form. Design of simple buildings which explore
formal possibilities of site, form and use. Coreq: 204. Prereq: 281. Sp

312 Materials and Methods of Construction (3) Properties of interior and exterior building materials and their relation to construction methods and detailing. Theory of material selection and application of field materials and methods play in the design process. Prereq: 232. Sp

323 Advanced Computer Applications (3) Computer applications in architecture with special emphasis on environmental control systems and/or structural calculations. Prereq: Computer Science 102.


332 Architectural Structures II (4) Continuation of analysis and design of simple structures of steel, wood and concrete based upon specific loading requirements. Use of construction and building codes, handbooks and design tables - selection of structural members. Prereq: 331. Sp

333 Advanced Structural Design (3) Analysis and design of more complex buildings. Structural and constructional aspects of building, including structures in steel, concrete, masonry, and timber to satisfy loading and building code requirements. Prereq: 332 or equivalent.


336 Advanced Design of Concrete Buildings (3) Precast and on-site concrete construction and maintenance, foundations, floor and wall systems. Domes and shell roofs. Prereq: 332 or equivalent.

341 Environmental Control Systems I (4) Heating, ventilating, and air conditioning systems, including passive and active solar energy systems. Plumbing and fire protection systems. Prereq: 231 and 232. F


400 Service Practicum (0) Experience in architectural or equivalent office for a minimum of 3 months to be completed prior to fifth year entry. E

403 Introduction to Preservation (3) History, theory, and legal aspects of architectural preservation and restoration.

404 Preservation Technology (3) Techniques of preservation: methods of analysis, history of materials and technology used in old buildings.

405 Descriptive Analysis of Historic Buildings (3) Identification and analysis of characteristic elements of buildings from various architectural periods, with emphasis on American architecture. Survey techniques.

406 Ideas in Architecture (3) Historical and critical review of the major ideas of architecture through the ages. Open to all students.

408 Cultural Comparison of Housing Patterns (3) Patterns of space and occupation and design elements of design for specific cultures with emphasis on housing.

410 History and Theory of Urban Form (3) Patterns of community development. Selected historical and contemporary examples. Basic urban design issues and precedents. Design approaches examined through lectures, readings, and design studies including historical change in urban form and design.

411 Architecture Since 1945 (3) Recent architectural developments and views of the future.

412 Non-Western and Indigenous Architecture (3) Building responsive to climate, material availability, and social level, as designed by anonymous builders. Examples from pre-historic times to the present including the Inca Cresent; the Indus Valley; Hindu, Buddhist, and Mughal architecture of India, China, and Japan.

413 Tennessee Architecture (3) History of settlement patterns and building in Tennessee. Selected standards examined through reading assignments, lectures, discussion, and field trips. Historical research using primary material.

414 History of Architectural Technology (3) Building materials and construction techniques from antiquity to the present.

415 Medieval Architecture (3) History of architecture from the decline of Rome to the beginning of the Renaissance. (Same as Medieval Studies 415.)


417 The International Style (3) A survey of architecture of the early modern movement, primarily in Europe and America, covering the years 1900 to 1940.


420 American Architecture, 1860-1940 (3) Stylistic periods from the Gothic Revival through the Twentieth Century.

421 History of Landscape Architecture (3) Intercultural, societal, and geographical influences which provide the theoretical basis for design throughout history. Selected examples of landscape architecture analyzed in terms of design.

422 Modern East European Architecture (3) Twentieth century architecture in Russia, Czechoslovakia, Poland, Hungary, East Germany, Rumania, Bulgaria, Yugoslavia.

425 Special Topics in Architecture (1-4) Individual projects under faculty direction. Credit adjusted to project complexity and level of effort. May be repeated. Maximum credit 6 hours. E

426 Special Topics in History, Theory and Criticism (1-4) Special topics in historiated subjects. May be repeated. Maximum credit 6 hours. E

431 Structural and Mechanical Applications (4) Analysis and selection of structural and mechanical systems for a specific case study to integrate technical information into a unified design solution. Prereq: 352, 342, Coreq: 471. F

433 Earthquake-Resistant Structures (3) Analysis and design of structures to resist earthquake effects. Earthquake phenomena and the degree structural systems, resonance and damping, introduction to dynamic analysis of structures, instrumentation and structural response, frame and shear wall behavior, ground structure interaction. Prereq: Consent of instructor. (Same as Civil Engineering 433.)

434 Elementary Structural Matrix Methods (3) Introduction to generalized matrix methods of analysis of structures. Review of matrix algebra and vectors; development of member stiffness and flexibility matrices; assembly of structure stiffness and flexibility matrices. Prereq: Consent of instructor. (Same as Civil Engineering 434.)

435 Planning and Design of Tall Buildings (3) Structural, economic and urban design considerations in design of tall buildings. Environmental and service systems; wind, fire and earthquake resistance; structural and construction techniques; building standards; steel, concrete, and masonry structures; foundations. Prereq: Consent of instructor.

443 Building Energy Analysis (3) Balancing heat flow through exterior skin of residential and multi and large commercial buildings; local climate evaluation; site planning, building size and orientation, window area, wall treatment, infiltration control. Energy use quantification methods and economic analysis of energy efficient design features. Architectural program analysis of external and internal load dominated buildings. Prereq: 341.

444 Advanced Environmental Control Systems (3) In-depth analysis and innovative concepts in design of heating, ventilating, and air conditioning. Prereq: 341.

445 Advanced Lighting (3) In-depth analysis and innovative concepts in design of lighting. Prereq: 342.

462 Professional Practice (4) Management and organizational theories and practices for delivering professional design services. Included are assessment of the business, industry and its influence on practice; analysis of the basic management functions within professional firms; and legal and ethical concerns facing practitioners today. Special regulations and privileges of the design professional. Sp

463 Architectural Development (3) Principles and practice of the architect as a developer. Impact of economics, finance and urban policy on the design and development of real estate. Open to all students.


466 Marketing Services (3) Theories of marketing for architectural practice. Case studies. Public relations procedures.


472 Architecture Design VI (6) Order and form in complex buildings developed to address programmatic, structural, energy and environmental issues. Prereq: 471. Sp

473 Architectural Photography (3) Photography as a design, research, and presentation medium. Application of photographic techniques, printing and processing. Color, black and white.


481 Advanced Architectural Design Topics (6) Special areas which affect architectural design, such as alternative approaches to design, energy, urban design, tectonics, historic preservation, and special building types. Work from this program may relate to the student's Comprehensive Design Project. Prereq: 472. Certain architectural electives may be approved as prerequisites for specified sections. F

482 Comprehensive Design Project II (6) Student selected project under faculty direction. Exploration of design hypothesis which informs the character of a substantial building design. (See Architecture 480.) Completed project will address all issues of environ-
ART (140)

101 Studio Fundamentals: Drawing and Design (2) Introduction to basic drawing media, concepts and techniques and to the elements and principles of pictorial organization.

102 Studio Fundamentals: Three Dimensional Design (2) Projects dealing with real space and three-dimensional materials. Primarily for art, architecture, art education, and interior design and housing majors.


105 Fiber: Three Dimensional Non-Woven Structures (3) Contemporary approaches to fiber art including exploration and experimentation with various fiber media and techniques in development of sculptural fiber forms.

106 Introduction to Metalsmithing and Jewelry (3) Basic metalsmithing and jewelry fabrication techniques including resouping, annealing, forging, chasing, embossing, dappling, drawing, rolling, sinking, soldering, fusing, polishing, and patination with individual studio problems to develop a personal style of expression.

151 History of Graphic Design/Illustration (2) Major movements and pivotal artists/designers/illustrators/art directors, 1850 to the present, and their impact on current graphic design trends. (Does not apply to art history requirement.)

161 Basic Printmaking (3) An introductory survey of printmaking with studio experience in xerography, monotype, cliches, verre, relief and collograph.


172 Western Art I (3) Major monuments in Western art with emphasis on Europe from prehistory through the Middle Ages. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

173 Western Art II (3) Major monuments in Western art with emphasis on Europe and America from 1400 to the early 20th century. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

176 Experiencing Art (3) Form and meaning in the visual arts. Lecture-discussion. Especially for non-majors.

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: at least one in-class essay examination and 3000 words of writing outside the classroom.

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

201 Fabric: Painting and Dyeing (3) Painting and dyeing processes in the development of surface design on fabric, including both, direct drawing, and/or other related approaches.


204 Fiber: Woven Wall Works (3) Fabrication of woven wall forms on the vertical loom, with emphasis on experimental use of fiber media in development of architecturally scaled wall works.

205 Jewelry (3) Metalworking and jewelry techniques emphasizing integration of casting and fabrication methods (including stonesetting, fastenings, and mechanisms) with individual studio projects to develop a personal style of expression. Prereq: 101. May be repeated. Maximum 6 hours.

206 Enameling (3) Graphic, painterly, and dimensional capacities of vitreous enamel techniques (including basse-taille, cloisonne, plaque-a-jour, limoges, sgraffito, grisaille, and champleve) with individual studio problems to develop an individual style of expression. May be repeated. Maximum 6 hours.

209 Special Topics in Fiber and Fabric (3) Student or instructor-initiated course offered to be 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 and dynamics of the human figure and of the figure in environment. Prereq: 211. May be repeated. Maximum 6 hours.

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

214 Painting II (3) Techniques of expression in oil and/or acrylic. Prereq: 213 for art majors; 191-Painting for non-art majors. May be repeated. Maximum 8 hours.


216 Watercolor II (3) Capacities of transparent watercolor, with attention to individual exploration 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 to enhance and expand the painting, drawing, and watercolor curriculum. Prereq: Determined by department for individual topic. May be repeated. Maximum 12 hours.

221 Ceramics I: Handbuilding (3) All ceramic 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 utilitarian pottery techniques, glazing and firing methods. Prereq: 221 for art majors; 191-Ceramic forms for non-art majors.

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

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

231 Photography I (3) Art of black and white photography applying traditional and contemporary techniques of composition, deve.
299 Special Topics (3) Student or instructor-initiated course offered at convenience of department. Prereq: Determined by department for individual topic. May be repeated. Maximum 12 hours.

300 Inter-area Portfolio Review (0) Review of prior work in studio work. Successful completion required prior to registration for junior and senior courses. Prereq: Consent of department. Satisfactory/No credit only.

301 Fabric: Individual Class Projects (3-6) Prereq: 104, 201, 203 or consent of instructor. May be repeated. Maximum 6 hours.

302 Fiber: Individual Class Projects (3-6) Prereq: 105, 202, 204 or consent of instructor. May be repeated. Maximum 8 hours.

306 Silversmithing (4) Intensive metalsmithing techniques including forging, raising, sheet forming, lathing, mokume, and lamination with individual studio problems to develop a personal style of expression. Prereq: 106, 203 or consent of instructor. May be repeated. Maximum 8 hours.

311 Drawing III (4) Development of personal drawing techniques and concepts through class problems. Prereq: 211 and 312 or consent of instructor. May be repeated. Maximum 8 hours.

312 Drawing Portfolio Review (0) Review of prior work in drawing. Successful completion required prior to registration for junior and senior courses. Prereq: Consent of department. Satisfactory/No credit only.

313 Painting III (4) Individual expression with varied media on canvas, panel, or paper. Prereq: 211 and 312 or consent of instructor. May be repeated. Maximum 8 hours.

314 Painting Portfolio Review (0) Review of prior work in painting. Successful completion required prior to registration for junior and senior courses. Prereq: Consent of department. Satisfactory/No credit only.


316 Advanced Drawing (3) Concepts of corporate graphic problems. Includes all areas of graphic design and illustration. Prereq: 351.

317 Watercolor Portfolio Review (0) Review of prior work in watercolor. Successful completion required prior to registration for junior and senior courses. Prereq: Consent of department. Satisfactory/No credit only.

320 Ceramics Portfolio Review (0) Review of prior work in ceramics. Successful completion required prior to registration for junior and senior courses. Prereq: Consent of department. Satisfactory/No credit only.


331 Photography II (4) Individual expression in photographic medium. Prereq: 231. May be repeated. Maximum 8 hours.

332 Studio Photography (4) Introduction to photography in studio, light, view camera, background setups, Polaroid materials. Prereq: 331.


334 Photographic Techniques Workshop (4) Theories and practices of film exposure and development. Introduction to zone system. Prereq: 331.

340 Sculpture Portfolio Review (0) Review of prior work in sculpture. Successful completion required prior to registration for junior and senior courses. Prereq: Consent of department. Satisfactory/No credit only.

341 Sculpture II (3) Further exploration and development of sculptural concepts and materials. Prereq: 241 and 340 or consent of instructor. May be repeated. Maximum 6 hours.

342 Life Sculpture II (3) Advanced modeling techniques in clay and wax working from the figure. Includes casting a minimum of one piece. Prereq: 242 and 340 or consent of instructor. May be repeated. Maximum 6 hours.

343 Metal Casting II (3) Further exploration of casting methods with non-ferrous metals. Prereq: 243 and 340 or consent of instructor.

344 Wood Sculpture II (3) Extension of skills and techniques begun in 244. Prereq: 244 and 340 or consent of instructor. May be repeated. Maximum 6 hours.

345 Steel Sculpture II (3) Further exploration of construction in steel and other materials. Prereq: 245 and 340 or consent of instructor.

346 Mixed Media Sculpture II (3) Further problems in the sculptural use of two or more distinctive materials. Prereq: 246 and 340 or consent of instructor.

350 Graphic Design/Illustration Portfolio Review (0) Review of prior work in graphic design illustration. Successful completion required prior to registration for junior and senior courses. Prereq: 252 or consent of instructor. Satisfactory/No credit only.


352 Corporate Design (3) Concepts of corporate graphic problems. Includes all areas of graphic design and illustration. Prereq: 351.

353 Black and White Illustration (3) Black and white media and techniques as applied to product and editorial illustration. Prereq: 350.

354 Color Illustration (3) Flat and process color media and techniques as applied to product and editorial illustration. Prereq: 353.


356 Introduction to Computer Enhanced Design (1) The computer as a graphic design tool. Prereq: Computer or Consent of instructor.

357 Printmaking Portfolio Review (0) Review of prior work in printmaking. Successful completion required prior to registration for junior and senior courses. Prereq: Consent of department. Satisfactory/No credit only.

362 Intaglio II (4) Color intaglio printing from a single metal plate, including a la poupee', chine colle', and relief' rolls. Prereq: 262 and 360. May be repeated. Maximum 8 hours.

363 Lithography II (4) Color lithography from stone and plates using mylar registration. Extra techniques; including xerox and monotype transfers, acid etching, reversals, chine colle' and photo-lithography. May be repeated. Maximum 8 hours.

364 Screen Printing II (4) Advanced work with basic screen printing techniques including photo screening. Emphasis upon developing a personal style of expression. Prereq: 6 hours of metal-asmithing or consent of instructor. May be repeated. Maximum 12 hours.

365 Advanced Film Design (3-6) Theory and practice of film making. Prereq: 292. (Same as Cinema Studies 392.)

366 Beginning Airbrush (3) Techniques of airbrush drawing; skills and creative applications emphasized. For art majors only.

401 Fiber: Advanced Projects (3-6) Prereq: 302 or consent of instructor. May be repeated. Maximum 12 hours.

402 Fabric: Advanced Projects (3-6) Prereq: 301 or consent of instructor. May be repeated. Maximum 12 hours.

404 Computer Enhanced Design (3) Prereq: 404 or consent of instructor. May be repeated. Maximum 6 hours.

406 Goldsmithing (3-6) Advanced metalsmithing techniques including granulation, electroforming, electroplating, electropolishing, anodization, and photo processing. Emphasis upon individual study problems to develop a personal style of expression. Prereq: 6 hours of metal-asmithing or consent of instructor. May be repeated. Maximum 12 hours.

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

411 Drawing IV (6) Individualized practice of personal drawing techniques and concepts, supplemented by individual and group critiques and weekly life drawing sessions. Prereq: 311. May be repeated. Maximum 12 hours.

413 Painting IV (6) Advanced painting stressing individual concepts and personal expression with varied media. Prereq: 313. May be repeated. Maximum 12 hours.


419 Special Topics in Drawing and Painting (3) Student or instructor-initiated course offered at convenience of department to enhance and expand the painting and drawing, and watercolor curriculum. Prereq: Determined by department for individual topic. May be repeated. Maximum 12 hours.

421 Ceramics: Individual Projects (3-6) Special topic each semester, e.g., low fire ceramics, alternative firing methods, specialized clay techniques. Individual direction stressed. Prereq: 261 and 322. May be repeated. Maximum 12 hours.

422 Ceramics: Advanced Projects (3-6) Each student is responsible for developing a thematic investigation of a specific concept using appropriate methods; materials, and presentation. Prereq: 421. May be repeated. Maximum 12 hours.

423 Ceramics: Surface Design (3) High and low fire glaze techniques. Use of slabs, slips, underglazes, airbrush, and lusters, etc. Relationship between form and surface emphasized. Individual direction expected. Prereq: 321 and 322.

424 Ceramics: Clay and Glazes (3) Clay chemistry, clay bodies, glaze theory, glaze calculation, intensive formulating, mixing and testing of clay bodies and glaze formulas. Prereq: 321 and 322.

384 Art of Southern Europe: 1575-1700 (3) Concentrated study of Caravaggio, Borelli, and Italian Baroque developments in all media. Spanish Baroque painting and sculpture with special attention to Velazquez.

385 Chinese Art (3) Survey from pre-Shang Dynasty to contemporary movements in China, Taiwan, and Hong Kong. New discoveries are stressed. Writing-emphasis course. At least one in-class essay examination and 3000 words of writing outside the classroom.

386 Japanese Art (3) Survey from ancient Jomon art to the Nihonga painting style of today. Variety of media emphasized. Writing-emphasis course. At least one in-class essay examination and 3000 words of writing outside the classroom.

392 Advanced Film Design (3) Theory and practice of film making. Prereq: 292. (Same as Cinema Studies 392.)

396 Beginning Airbrush (3) Techniques of airbrush drawing; skills and creative applications emphasized. For art majors only.
PHI SCHOOL OF ARTS AND CRAFTS

ART ARROWMONT PI BETA

ART EDUCATION (141)

300 Art for the Elementary Classroom Teacher (2) Methods of teaching art in elementary classrooms including developmental theory, philosophical concerns and selected media experiences.

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. F, Sp

302 Concepts of Drawing and Painting (3) Processes in teaching of drawing and painting including considerations of pertinent literature and research. Prereq: 301 and admission to Teacher Education Program. F

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

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

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

410 Pre-Internship Seminar (1) Orientation describes the 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

481 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.
482 Internship II: Grades K-12 (3-6) Demonstration of professional competence in planning, instruction and classroom management. Internship is completed in local public schools. Prereq: 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.

ASIAN LANGUAGES (144)

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

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

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

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

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

311-312 Chinese Literature in English Translation (3,3) 311-312 Classical literature. 312-Vernacular and modern literature. Writing course: at least one in-class essay examination and 3000 words of writing outside the classroom.

313-314 Japanese Literature in English Translation (3,3) 313-314 Masterpieces of poetry, fiction, and drama to 1800. 314-Modern: masterpieces of fiction since 1800. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

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

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

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 introduces the basic vocabulary of astronomy and scientific method. Components of the solar system including results from interplanetary exploration; habitability and theories of the origin and evolution of our solar system in light of current knowledge and scientific reasoning: stellar birth, evolution and death as a chain of events; characteristics of galaxies and the origin of the universe examined in light of modern astrophysics and particle physics. A major in 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; properties and theories of the origin and evolution of the solar system in light of current knowledge and scientific reasoning: stellar birth, evolution, and death as a chain of events; characteristics of galaxies and of the beginning of the universe in light of modern astrophysics and particle physics. Principles for interpretation of astronomical observations are reinforced in laboratory. Must be taken in sequence. 3 hours lecture, 2 hour lab. Only one of three sequences 151-152, 161-162 or 217-218 may be taken for credit.

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

411 Astrophysics (3) Development of analytical physical models of the galactic structure of the universe, stellar and interstellar matter, and planetary systems. Topical and interdisciplinary approach includes consideration of quasars, pulsars, black holes and current developments in the field. Acceptable for major credit in physics. Prereq: Physics 232 and consent of instructor.

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

AUDIOLOGY AND SPEECH PATHOLOGY (160)

126 Speech for Foreign Students (3) Sounds and intonation patterns of American English and relation of spelling to sound. Designed to improve 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. (Same as Special Education 331.)

371 Audiology I (3) Basic acoustics. Fundamental aspects of auditory anatomy and physiology. Introduction to disorders of hearing. Basic Psychoacoustics. (Same as Special Education 371.)

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

433 Clinical Practice in Speech-Language Pathology I (5) Prereq: 305. Consent of instructor. Enrollment for fewer than 2 semester hours must have prior departmental approval. (Same as Special Education 433.)

434 Clinical Practice in Speech-Language Pathology II (1-4) Prereq: 433 and consent of instructor. Enrollment for fewer than 2 semester hours must have prior departmental approval. May be repeated. Maximum 4 hours. (Same as Special Education 434.)

440 Voice Disorders (3) Etiology, diagnosis, and treatment of organic and functional voice disorders. Prereq: 304, 306, or consent of instructor. (Same as Special Education 440.)

445 Clinical Practice in Audiology I (4) Prereq: 473 and 494.

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

461 Introduction to Language Pathology in Children (3) Natural history and treatment of language retardation in children: observations of language therapy required. Prereq: 320 or 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 audimetry; pure tone, speech, masking and overview of special auditory tests. Prereq: 371. (Same as Special Education 473.)

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 psychoacoustic aspects, amplification components/characteristics, assistive devices, speech acoustics, speech perception, speechreading, parent-infant, preschool school years of children, communication impairments/handicaps/remediation of adults, effects of aging/remediation on the elderly, and case studies. Prereq: 305 and 473, or equivalents or consent of instructor. (Same as Special Education 494.)

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

**BIOCHEMISTRY (188)**

310 Introduction to Biochemistry (3) Biochemical principles underlying physiological events in animal tissues. Metabolism of carbohydrates, lipids, proteins, and nucleic acids. Biochemistry of body fluids. Action of drugs and hormones. Prereq: Chemistry 120-30 or 100-10 and Biology 110-10. Lectures and discussions. Not available for credit if credit has previously been received for 410 or 420, F, Sp

410 Cellular and Comparative Biochemistry (4) Electrolyte behavior; chemistry and structure of proteins. Enzyme behavior and function; catabolism and energy capture; synthetic metabolism; nucleic acid function, protein synthesis, and biochemical genetics; regulation of biological processes. Prereq: Chemistry 360-60 or Biology 110-20. Three lectures and discussion, F, Sp


420 Advanced Topics in Biochemistry (3) Selected Topics of current interest, e.g., allosteric theory and control of enzyme reactions; protein and nucleic acid chemistry; regulation of gene expression, bioenergetics, etc. Emphasis on literature and the experimental basis of current knowledge. Historical background, societal impact, ethical and moral implications, and future development of technologies. Written reports required. Prereq: 410. Sp Writing-emphasis course: at least one in class essay examination and 3000 words of writing outside the classroom.

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 or Coreq: 410, 419.

471-481 Introduction to Physical Biochemistry (3,3) Physicochemical principles with applications to biological systems. Must be taken in sequence. 471 Thermo-dynamics; chemical equilibrium; solution chemistry; transport; electrochemistry; kinetics including enzyme-catalyzed reactions. 481-Elementary quantum chemistry; interactions of light with biological molecules; optical and magnetic scattering. 471 Prereq: 100-110, 150. 481 Prereq: 100-110, 200. Students may select from a list of selected macromolecules. Prereq: Mathematics 142, Chemistry 360-365 and Biology 120 or consent of instructor. 471-481. Sp. (Same as Chemistry 471-481.)

**BIOLOGY (190)**

110-120 General Biology (4,4) Biology 110 - Biology of cells and organisms; basic 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. Not required to be taken in sequence. Students who receive credit for 110-120 may not also receive credit for Biology 150, Botany 110-120, Honors Botany 116-126, or Honors Zoology 117-118.

150 Biology for Majors (5) General biology emphasizing biological principles. Open to students who have a year of high school biology and a score of 26 or better on the natural science section of the ACT. Students who receive credit for 150 may not also receive credit for Biology 110-120, Botany 110-120, Honors Botany 116-126, Honors Zoology 117-118, or any 310-320, 321, 412; Microbiology 310 or 319; Ornamental Horticulture and Landscape Design 330; and Plant and Soil Science 331. (Same as Botany 117-118.)

210 Cell Biology (4) Organization and function of the cell. Prereq: 110-120 or 150, Botany 110-120, Honors Botany 116-126, or Honors Zoology 117-118 or any 310-320, 321, 412; Microbiology 310 or 319; Ornamental Horticulture and Landscape Design 330; and Plant and Soil Science 331. (Same as Botany 117-118.)

220 General Genetics (4) Classical and modern principles of heredity. 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 120-120. 3 hours lecture, 1 discussion each week. May be taken in any sequence or combination with 210 and 220.

230 General Ecology (4) Relations between organisms and their environment, including human environmental problems. Prereq: 110-120 or 150, or Botany 110-120 or 118-128, or Honors Zoology 117-118 or the equivalent of 2 years of high school biology and satisfactory ACT scores; Chemistry 120-120. 3 hours lecture, 1 discussion this week. May be taken in any sequence or combination with 210 and 220.

**BOTANY (198)**

110-120 General Botany (4,4) Introduction to taxonomy through identification: basic organization and function of plant cells; respiration; photosynthesis; genetics (including meiosis, mitosis, Mendelian inheritance); survey of plant kingdom (bacteria, algae, fungi, mosses, ferns, conifers, and flowering plants). 120-Plant growth, anatomy, evolution, regulation; uptake and transport; origin of life and mechanism of evolution; ecology, importance to humans and environmental concerns. Students may not receive credit for both Botany 110-120 and Biology 110-120, Botany 118-128, or Biology 150. 110 - F, Sp; 120 - F, Su.

118-128 Honors: General Botany (4,4) Same as General Botany 110-120 with emphasis on special topics and philosophical context including special presentations and field experiences. Prereq: Open to freshmen with permission of the Botany Department and of the Botany Department and Honors Department. Prereq: 110-120 or 118-128 Honors. Students may receive credit for both Botany 118-128 and Biology 110-120, Botany 118-120, or Biology 150. 110 - F, Sp; 120 - F, Sp.

305 Socio-Economic Impact of Plants (3) Significance of plants in the development of human cultures; 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, including genetic and ethical issues and their implications for human society. (Same as Anthropology 306.)

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

310-320 Plants: An Evolutionary Survey (4,3) Morphology, development, natural history, and evolution. 310 - Survey plants; 320 - Survey vascular plants (ferns, fern allies, gymnosperms, and flowering plants). Students may select from a list of selected macromolecules. Prereq: 110-120 or consent of instructor. 310-118, 320-116. Prereq or Coreq: 310-320, 321, 412; Microbiology 310 or 319; Ornamental Horticulture and Landscape Design 330; and Plant and Soil Science 331. (Same as Ornamental Horticulture 451.)

**BROADCASTING (202)**

275 Introduction to Radio and Television (3) Lecture and lab course providing students with an overview of radio, television, cable, and related technologies. Includes policy, programming, regulations, and history of radio and television on society. Students gain practical experience in radio at WUTF-FM and in television through a weekly TV lab. Prereq: Communications 100. F, Sp

310 Radio News (3) Writing, reporting, and performing news for radio. Lecture and lab course with experience in total news operation of WUTF-AM. Prereq: 275 and Communications 200.

320 Radio Sales and Promotion (3) Principles of radio sales and promotion. Use of ratings in sales presentations and promotion campaigns. Prereq: 275 and 400-499. Students may be assigned to work in sales and promotion at WUTF-AM. Prereq: 275 and Communications 200.

330 Producing for Radio (3) Functions, theories, tools, and techniques of writing, producing, and performing for radio. Students write, perform, and produce on WUTF-AM. Overview of audio equipment and production techniques. Prereq: 275 and Communications 200.

410 Television News (3) Writing, reporting, and producing news for television. Lecture and lab course providing students with experience as reporter/producers for a television news program. Includes an overview of electronic news gathering equipment and technique as well as video techniques. Prereq: 320 and 330.

420 Television Sales and Promotion (3) Problems and practices of television and cable sales and promotion. Case studies in sales and sales management; use of ratings and computers in sales presentations and promotion campaigns. Practical experience in television sales and promotion included. Prereq: 320.


mental functions, cost and income analysis, leadership, career opportunities in business. Making the career decision, preparing for and conducting a job campaign. Using the Placement Office. Satisfactory/No Credit only.

369 Organic Chemistry Laboratory (2) Experiments on topics covered in 360. Coreq: 360. 2 lab. E

400 Research in Chemistry (3) Open to senior majors with consent of department head. Written reports are required. Advanced study and research with faculty advisor. Ordinarily the area of study is not part of the departmental curriculum. Students must complete an application form available in the department. Prerequisites: Senior standing and consent of department head.

BUSINESS ADMINISTRATION (205)

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

320 Business Career Planning and Placement (1) Career opportunities in business. Making the career decision, preparing for and conducting a job campaign. Using the Placement Office. Satisfactory/No Credit only.

467 Honors: Corporate Executive in Residence Seminar (3) Interaction with top corporate executives from a wide spectrum of business disciplines. Domestic and international strategic planning as it is applied in major U.S. Corporations. Executive presentations and small group discussion on goods and services in consumer and industrial settings. Prereq: Senior standing. Fine 301, Management 301, Marketing 301 and consent of instructor.

491 Foreign Study (1-15) Prereq: Consent of instructor. See page 57.

493 Independent Study (1-15) Prereq: Consent of instructor. See page 57.

495 Seminar in International Business Policy (3) Capstone course for students in the Language and World Business Program designed to integrate concepts covered in other business courses. For students with major concentrations in International Business only.

BUSINESS LAW (216)

301 The Legal Environment of Business (3) Introduces students to the legal system, major legal terms and concepts, and legal effects on the business world. Prereq: Consent of instructor. See page 57.

401 Law of Business Organizations and Commercial Transactions (3) Introduction to legal implications of basic business transactions including contracts, property, negotiable instruments, secured transactions, bankruptcy, corporate law, trust law, wills, trusts, and estates. Prereq: 100 or 130 or 131 or 138. 3 hours and 1 lab. E

CHEMISTRY (235)

100 Principles of Chemistry (4) Bonding and molecular structure, gas laws, liquid and solid state, solutions, colloids, acids and bases, oxidation and reduction, kinetics and equilibria. 3 hours and 1 lab. E

110 Introduction to Organic and Biochemistry (4) Organic chemistry: alkanes, unsaturated and aromatic hydrocarbons, structures and reactions of various organic functional groups. Biochemistry: amino acids and proteins, carbohydrates, lipids, nucleic acids. 3 hours and 1 lab. Prereq: 120 or 130 or 131 or 138. E

120-130 General Chemistry (4,4) A general course in theoretical and descriptive chemistry. 120 - Modern atomic theory, chemical bonding, stoichiometry, quantitative analysis of solution chemistry, kinetics. 130 - Chemical equilibria, thermodynamics, descriptive chemistry of non-metallic and metallic elements, introduction to organic and biochemistry. Prereq for 120: 120, 3 hours and 1 lab. E

121-131 General Chemistry (4,4) For chemistry majors. Subject matter similar to Chemistry 120-130. Prereq for 131: 121, 3 hours and 1 lab. 121-F, 131-Sp.

125-136 Honors: General Chemistry (4,4) 3 hours and 1 lab. 125-F, 136-Sp.

140 Chemical Programming (2) Use of the computer in solving problems encountered in chemistry. Required of and limited to chemistry majors. Prereq or Coreq: 130 or 131 or 138. 1 hour and 1 lab. Sp.

200 Introduction to Chemical Research (1) Participation in an active research project with faculty advisor. Ordinarily the area of study is not part of the departmental curriculum. Students must complete an application form available in the department. Prerequisites: Senior standing and consent of department head.

430 Advanced Inorganic Chemistry (3) Atomic and molecular structure, bonding theories, descriptive chemistry of electrons, kinetics, and mechanism of inorganic reactions, applications of modern techniques for characterization, coordination and organometallic chemistry. Prereq: 230 or Coreq: 481 or 483. Sp.

431 Radioactivity and Its Application (2) Radioactive materials: properties of radiation, active decay, detection apparatus and techniques, tracer procedures, safety precautions in agriculture, biology, medicine, nutrition, etc. Not for credit by physics or physical science majors or minors. Prereq: Mathematics 122 or equivalent and two courses from the following: 100, 110, 120-130, 121-138, 126-136. 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). F.

473-483 Physical Chemistry (3,3) Students may not receive credit for both 473 and 475 nor for both 481 and 485. 473-483, 475-485 deal with third and second laws of thermodynamics, chemical equilibria, simple phase equilibria; properties of solutions; introduction to statistical thermodynamics; introduction to quantum mechanics; introduction to electronic spectra and applications to electronic structure of atoms and molecules; molecular spectroscopy. Prereq: 130 or 130 or 138 or 138. Prereq or Coreq: 480 or 481 or 222 or 224. F.

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

484 Advanced Physical Chemistry (3) Topics from chemical dynamics, statistical thermodynamics, quantum mechanics of atomic and molecular systems, crystal structure and solid state. Prereq: 481 or 483. Sp.

490 Introductory Polymer Chemistry (3) Fundamental principles stressing the role of chemistry in the interdisciplinary field of polymer science. Relation of molecular structure to bulk properties of polymers. Prereq: 360. Prereq or Coreq: 431 or 483. F.

CHILD AND FAMILY STUDIES (245)

110 Introduction to Early Childhood Education (3) History, philosophy, current trends, issues, programs, program models. Includes observation. F.

210 Human Development (3) Conception through adulthood in various social/developmental, physical, and psychological aspects of ontogeny, normative, nonnormative development. Includes observation. F, Sp.


213 Development in Middle Childhood and Adolescence (3) Development during middle childhood and adolescence: interrelationships among cognitive, emotional, social, physical aspects of ontogeny; normative and nonnormative development. Includes observation. Prereq: 211. Sp.

220 Marriage and Family: Roles and Relationships (3) Emerging, declining roles, changing relationships among family members across life cycle from various theoretical approaches; impact of gender roles on marital relationships, marital quality, power, decision-making, communications, conflict management, combining work-family roles. (Same as Women's Studies 230) F, Sp.

240 Human Sexuality (3) Sexuality through cultural, social, familial, and psychological factors. F, Sp.

300 Family Systems (3) Family systems as a component of human ecology; factors impacting on the nature of individuals, families, and environments. Prereq: NTR 100, RDS 350, OCS 216, and 6 hours in major. F, Sp.
312 Adulthood and Aging (3) Adult life in society from youth through elderly, adjustment to internal, environmental, and social changes; impact of growing older. Emphasis on varying aspects of development: physical, cognitive, emotional, social. Includes observation. Sp

320 Parent Education (3) Factors in contemporary American families impacting on parent-child relations; review of programs for strengthening parenting skills. Prereq: 220 or consent of instructor. Sp

345 Family Resource Management (3) Theory and application of managerial functioning in family settings: analysis of goals, resource use, information systems, constraints within families. Observation and analysis of diverse family practices. Prereq: 220 or consent of instructor. F

351 Early Childhood Education II: Curricula and Program Development for Young Children (4) Planning effective early learning programs for young children relating knowledge of children's growth and development to appropriate experiences in art, music, number, logic, media, physical knowledge; planning, implementing, evaluating curriculum activities. Laboratory participation included. Prereq: 110 and 211 or consent of instructor. F

360 Early Childhood Education I: Environments for Children (4) Classroom management, behavior guidance, organization of day care environments, communication, interpersonal skills, interaction with children, child stress reduction and management in classroom. Laboratory participation included. Prereq: 110 and 211 or consent of instructor. F

375 Family Interaction (3) Dynamics within family systems, marriage, and parent-child relationships; communication and conflict management within families. Prereq: 220. Sp

400 Teaching in Community-Based Programs (3) Prereq: HEED 350. (Same as Home Economics Education 440.) Sp

450 Assessment in Early Childhood Programs (3) Physical, cognitive, social, language development in handicapped and nonhandicapped children birth to 5 years; early childhood. Includes supervised practicum in assessment. Prereq: 350. Coreq: 351. F

451 Early Childhood Education III: Mainstreaming Exceptional Children (3) Individualized curriculum planning based on knowledge of normal and nonnormative development, assessment, effective teaching strategies for facilitating development. Includes participation. Prereq: 351. F

460 Directed Study in Child and Family Studies (1-3) Individual learning experience arranged for students under supervision of faculty. May be repeated with different topics. Maximum 6 hours. Prereq: 9 hours in Child and Family Studies and consent of instructor. F, Sp, Su

470 Student Teaching (15) Responsibility for planning and guiding groups of infants, toddlers, or preschoolers under supervision of Master Teacher. Includes weekly seminar. Prereq: 350 and 351. Satisfactory/No Credit only. F, Sp, Su. F and Sp student teaching begins first day of registration and ends on last day of final examination period (student teaching follows the CDL calendar and does not include Spring break). Summer student teaching begins the day following Spring commencement and ends on the day before Summer commencement. No other classes may be taken during student teaching semester.

471 Advanced Practicum in Applied Child Development Specializations (3-4) Supervised experiences working with children and families in community settings related to each student's child development specialization. Includes daily early childhood education programs, early childhood administration, early childhood special education, and research. Prereq: 470 and consent of the instructor. May be repeated. Maximum 6 hours. Satisfactory/No Credit only.

475 Day Care Administration (3) Theories, methods, and materials for administrators of early childhood education programs; writing funding proposals, staff selection, financial management, recruiting and enrolling children, supervision, evaluation, public relations, communication, conflict resolution. Includes participation experience. Prereq: 351 or consent of instructor. Sp

479 Preparation Seminar (1) Orientation to practicum placement, experiences and requirements. Must be completed term immediately preceding enrollment in 480. Prereq: Must meet progression requirements. Satisfactory/No Credit only. F, Sp

480 Practicum in Family Life Education (3) Supervised experiences in community-based family life education programs. Prereq: Progression into the concentration and 479. Satisfactory/No Credit only. F, Sp

481 Research in Child and Family Studies (3-6) Supervised research experiences. Prereq: 9 hours in Child and Family Studies, cumulative GPA of 3.0 or above, Junior standing, or consent of the instructor. May be repeated. Maximum 12 hours.

485 Special Topics in Child and Family Studies I-9 Personal or professional interest in human development or family studies. Prereq: Consent of Instructor. F, Sp

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

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 333.)

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

392 Advanced Film Design (3-6) (Same as Art 392.)

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

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

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

489 Special Topics in Film (3) (Same as English 489.)

CLASSICS (257)

221 Early Greek Mythology (3) Archaic Greek religion through comprehensive study of Greek myths with emphasis on the impact they had on the ancient world and on the evolution of Greek philosophy. Prereq: Consent of instructor. F

281 Classical Greek and Roman Mythology (3) Use of myth in literature, history, philosophy and art of Greece and Rome from about 450 B.C. to about 350 A.D. Two foci are the latter half of the fifth century B.C. and the last quarter of the first century B.C. Includes Oriental influences and Roman influences, including early Christianity. Readings include Sophocles, Euripides, Roman poetry, and modern scholarship. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

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 reanimate the culture of the Minoan and Mycenaean civilizations and that of the following Dark Age. For Archaic, Classical, and Hellenistic emphasis on development of architecture, sculpture, and vase painting. Includes minor arts and the relationship between archeology and art. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

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 and their effects on the Ancient Greek world and on the civilization of the Etruscan culture from tombs, paintings, and artifacts, development of Roman archief and architecture, and urban planning. (Same as History 231.) Prereq: Consent of instructor. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

235-236 Greek and Roman Literature in English Translation (3,4) (Same as Classics 235-236) Major literature of ancient Greece from Homer to Menander, with emphasis on the sixth and fifth centuries B.C. 254-Literary History 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: at least one in-class essay examination and3000 words of writing outside the classroom.

273 Medical and Scientific Terminology (3) Greek and Latin roots from which medical and scientific terminology is derived. Extensive practice in use of Latin nomenclature. Prereq: Consent of instructor. F, Sp

331 Archaeology of the Aegean Bronze Age and Early Greece (3) Includes Troy, the Cycladic islands, the Greek mainland, Crete, and Cyprus ca. 3000-700 B.C. Rise and fall of the Minoan and Mycenaean civilizations and their effects on the Ancient Greek World and Cyprus. Evidence for daily life, religion, trade, and foreign contacts. Architecture, wall paintings, and artifacts. Prereq: One of the following: 221, 232, 233, 281, History 310. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

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, Pergamum, Olympia, Delphi. Students are recommended to have taken one of the following: 221, 281, History 310. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

381 Greek Civilization (3) Major aspects of ancient Greek civilization: religion, fine arts, political life, pan-Mediterranean relations, the prominence of Athens; the role of modern archaeology in interpretation; emphasis on the fifth and sixth centuries B.C. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

382 Roman Civilization (3) Major aspects of ancient Roman civilization: political institutions, art and architecture, the development of the city of Rome; ancient Rome during the late Republic and early Empire. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

383 Women in the Greek and Roman World (3) The condition of women in the apparently male-dominated...
world of Classical Greece and Classical Rome. Evidence from literature, vase paintings, and other arts is examined from the age of Homer to the second century A.D., with emphasis on Athens in the fifth century B.C. and Roman Italy in the first and second centuries A.D. (Same as Women's Studies 393.)

401 Greek Poetry (3) Epic, lyric, drama. Authors vary. May be repeated for credit. Maximum 9 hours. Prereq: 398.

402 Greek Prose (3) History, philosophy, and oratory. Authors vary. May be repeated for credit. Maximum 9 hours. Prereq: 398.

422 Seminar in Classical Studies (3) Field of Classical studies today: recent achievements in the areas of both philosophy and archaeology; impact of the deification 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 8 hours. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

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 content course offering subject matter not taught in an existing course, or concentration on one aspect of the existing survey. May be repeated. Maximum 9 hours. Prerequisites according to topic.

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

491 Foreign Study (1-15)

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

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

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

496 Honors: College Scholars Studies (2-12) Designed for College Scholars working on their senior thesis, project, or performance. May be repeated. Maximum 16 hours.

COMUNICATIONS (259)

100 Introduction to Mass Communications (3) Overview of systems of mass communications, with emphasis on media economics and social impact of communications controls, role and effects. Advertising, broadcasting, journalism and publishing, and public relations are examined in the context of theories of mass communications.

200 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 persuasive text. 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, use by communications media. Applications to both internal decision-making and to external communication in media. Prereq: 200 or consent of instructor. F, Sp

400 Mass Communications Law and Ethics (3) Emphasis on legal issues directly affecting the mass media: libero profession, legal and ethical controls, and political 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) Literatry perspectives and values in different time periods and cultures. Variable content. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

301 Computer Techniques for Literary Study (3) Computer research in literary study including writing programs in BASIC which have literary research applications. Projects include indexing and bibliography, concordancers, syntactic analysis, content analysis, authorship attribution, textual editing, and stylistic analysis. No previous computer knowledge or background is assumed or required.

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

COMPUTER SCIENCE (266)


111 Computer Organization (3) Number systems, internal representation of numbers in computers, hardware components, hardware organization, introduction 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, tables, streams, algorithms, files. 3 hour lab required. Prereq: 102.

219 Electronic Printing and Graphics (1) Current technology and research. Students begin writing a senior thesis. Prereq: Senior standing. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

412 Senior Thesis II (3) Continuation of 411. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

420 Advanced Topics in Machine Intelligence (3) Topics such as search, learning, neural networks, pattern recognition and natural language processing. Emphasis on faculty research. May be repeated. Maximum 9 hours. Prereq: completion of core curriculum or consent of instructor.

430 Advanced Topics in Hardware Systems (3) Topics such as architecture, parallel processors, microprogramming, networks and communications. Emphasis on faculty research. May be repeated. Maximum 9 hours. Prereq: completion of core curriculum or consent of instructor.

450 Advanced Topics in Software Systems (3) Topics such as operating systems, compilers, parallel computation, software engineering, database systems and programming languages. Emphasis on faculty research. May be repeated. Maximum 9 hours. Prereq: completion of core curriculum or consent of instructor.

470 Advanced Topics in Scientific Computation (3) Topics such as numerical methods, supercomputers and computer modeling and simulation of physical systems. Emphasis on faculty research. May be repeated. Maximum 9 hours. Prereq: completion of core curriculum or consent of instructor.

471 Numerical Analysis (3) (Same as Mathematics 471.)

472 Numerical Algebra (3) (Same as Mathematics 472.)

480 Advanced Topics in Theoretical Computer Science (3) Topics such as theory of computation, complexity theory, formal languages and graph theory and its applications. Emphasis on faculty research. May be repeated. Maximum 9 hours. Prereq: completion of core curriculum or consent of instructor.

493 Independent Study (1-15) Special project in area of student's primary interest. Directed by Computer Science faculty, perhaps jointly with student's faculty advisor. Intended for students with a specific project to pursue in conjunction with a faculty member. Project may be from a department other than Computer Science in which a faculty member from the appropriate department will help oversee the project. May be repeated. Maximum 9 hours may be applied to the major. Prereq: consent of instructor.

494 Special Topics in Computer Science (1-3) May be repeated. Maximum 9 hours.

DANCE (274)

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

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

210 Ballet: Level I (2) Instruction and practice in elementary classical ballet techniques. May be repeated. Maximum 4 hours.

220 Jazz: Level II (2) Instruction and practice in elementary jazz dance styles and techniques. May be repeated. Maximum 4 hours.

230 Modern: Level I (2) Instruction and practice in elementary modern dance techniques. May be repeated. Maximum 4 hours.

404 Tap: Level I (2) Instruction and practice in elementary tap dance techniques. May be repeated. Maximum 4 hours.

411 Ballet: Level II (2) Instruction and practice in intermediate classical ballet techniques. Available to majors and minors or with consent of instructor. May be repeated. Maximum 12 hours.

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


**ECONOMICS (283)**

100 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 (4) Theory of consumer behavior, theory of firms, supply and demand, costs of production, market models, national income and imputation 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.


321 International Economics (3) Balance of payments, exchange rate determination, monetary and fiscal policies, monetary arrangements, comparative advantage, tariff and nontariff trade distortions, protection arguments, regional integration. Prereq: 201.

323 Economic Development (Third World) (3) Theories of economic development and its strategies used to promote economic improvement in less developed countries. Prereq: 201. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

324 Comparative Economic Systems (3) Economic processes under alternative strategies and allocation mechanisms. Prereq: 201. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

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 Atlantic economy. Prereq: 201. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.


341 Survey of Labor Economics (3) Extension of economic principles to labor markets, public policy questions, demand and supply of labor, labor market discrimination, unemployment, unions in the private sector, investment in individuals, education and training, mobility. Prereq: 201.

343 Labor Relations and Collective Bargaining (3) See Management 311.

351 Monetary Economics (3) Role of money in the economy, Federal Reserve System, Evaluation of monetary policy, U.S. depositary institutions and money supply process. Prereq: 201.

352 Real and Urban Economics (3) Overview of regional and urban issues, economic analysis of agricultural location and human migration, economic basis for land use patterns, central places, and urban form, regional and urban structure, growth, and methods of analysis. Prereq: 201.

381 Econometrics (3) Methods of specification, estimation, and interpretation of economic relationships. Includes specification of models, estimation methods, statistical inference of empirical results, forecasting processes, and comparison of econometric models, such as multiple-collinearity, heteroscedasticity, and autocorrelation. Prereq: 201, Statistics 201, Mathematics 121-122 or 141-142.

400 Special Topics (3) Topics vary. Prerequisites determined by department each time course is offered. Numerical grade is given to law students. Prereq: 201.

413 Macroeconomic Fluctuations (3) Analysis of historical data, methods of analyzing macroeconomic fluctuations, theoretical explanations of cycles, and the role of monetary and fiscal policies in the aggregate economy. Prereq: 313 or consent of instructor. Writing-emphasis course.


424 Political Economy of World Development (3) Topics vary. Latin America, Asia, Soviet Union and Eastern Europe. Analysis of major economic strategies, policies, and problems. Major writing requirement. Prereq: 201. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.


462 Economics of Resources and Environmental Policy (3) Economic analysis of policy and allocation of resources. Benefits and costs of development of natural resources and impacts of growth on environment. Prereq: 201. Writing-emphasis course.

471 Public Finance: Optimal Government Functions and Related Determinants (3) Tax and transfers, determination of consumption, external effects, public investment, social decision making. Prereq: 201. Writing-emphasis course.

472 Public Finance: Taxation and Intergovernmental Relations (3) Individual taxes and tax system, non-tax resources, and local federalism. Prereq: 201. Writing-emphasis course.


491 Honors Seminar (3) Topics vary. Senior paper required. Prereq: Senior standing, 3.4 or higher GPA in economics and consent of instructor.

493 Independent Study (1-3) Opportunity for qualified students to pursue topics of special interest. Prereq: Senior standing, 3.0 GPA in economics courses, consent of instructor. Maximum total credit 3 hours.

**EDUCATION (289)**

100 Special Topics (1-3) Study in selected disciplinary or professional areas represented in the College of Education. Topics to be determined as needs/issues are identified and as resources are available to support the course.

102 Teaching and Helping Professions in Education (3) Study in selected interdisciplinary/professional areas in the College of Education. The course is designed for students who are majoring in a College of Education or who are entry level students in the College. The course provides an opportunity to pursue the many and varied programs of study in the College.

302 School and American Society (3) (Same as Educational Curriculum and Instruction 302.)

400 Professional Studies: Teachers, School, and Society (2) Focus on roles and responsibilities of teachers, on how schools are organized and the relationship between the schools and the broader society. Prereq: 201, Educational Planning and Counseling Psychology 210; Prereq: Admission to Teacher Education.

401 Professional Studies: The Learner (3) Understanding of students from diverse cultures; study of learning principles; special needs of learners; behavior management techniques. Prereq: or Coreq: Educational and Counseling Psychology 210 and Education 400; Prereq: Admission to Teacher Education.
EDUCATIONAL AND COUNSELING PSYCHOLOGY (311)

210 Psychoeducational Issues in Human Development (3) Understanding and application of the psychology of human development to teaching/learning processes in educational settings. Prereq.: Consent of instructor. Sp

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. E

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

404 Special Topics (1-3) Instructor initiated course offered at convenience of the department on various topics of current interest. Contact department for listing of topics to be covered. May be repeated. Maximum 15 hours. E

410 Sex Role Development: Implications for Education and Counseling (3) Discussion of issues related to sex role development and its relevance in education and counseling settings. (Same as Women's Studies 410.) F, Su

431 Personality and Mental Health (3) Perspectives of mental health applications to education and other social institutions. E

432 The Disadvantaged Student: Psychoeducational Perspectives (3) Theory and research regarding etiology, psychosocial behavior and appropriate interventions. Sp

450 Self-Management in the Helping Professions (3) Applications of self-management strategies to career, social, emotional and health domains for both helping professionals and their clientele. Prereq.: Introductory course in psychology and permission of instructor. Su

493 Independent Study (1-15) Independent investigation of problems in educational and counseling psychology. May be repeated. Maximum credit 15 hours. E

EDUCATIONAL CURRICULUM AND INSTRUCTION (301)

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

203 Field Study in Education (1-3) Problems of persons in active involvement in educational settings. Methods of teaching, curriculum materials, school-community relationships and school organizations. May be repeated. Maximum 6 hours. E

302 School and American Society (3) Historical, philosophical and social perspectives on contemporary educational issues. (Same as Education 302.) F, Su

304 Applications of Instructional Technology in Elementary and Middle School Teaching (1-3) Applications of instructional technology in the elementary and middle schools with an emphasis on computers. Exposure to and experience with using educational software. May be repeated. Maximum 3 hours. Prereq.: Admission to Teacher Education Program. Su

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

326 Teaching Language Arts/Reading in Elementary and Middle Schools (3) Language and language development as applied to teaching of oracy (listening-speaking) and aspects of literacy (reading process/reading and writing). Includes methods and materials. FBS Education students only. Prereq.: Admission to Teacher Education Program. F, Sp

329 Teaching Developmental Reading in the Elementary and Middle Schools (3) Methods and background on how to teach word recognition skills, comprehension, study skills and how to use materials. Includes units on phonics, evaluation and basal readers. FBS Education students only. Prereq.: Admission to Teacher Education Program. F, Sp

335 Teaching Elementary and Middle School Mathematics (3) Specific procedures for helping children learn mathematics. Unit planning, daily planning, grouping, classroom management are included. FBS Education students only. Prereq.: Admission to Teacher Education Program. F, Sp

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. Prereq.: Admission to Teacher Education Program. Satisfactory/No Credit only. E

352 Field Experience in Teaching: Secondary I (1) Field experiences in tasks related to teaching and teacher roles. Prereq.: Admission to Teacher Education Program. F, Sp

353 Field Experience in Teaching: Secondary II (1) Field experiences in tasks related to teaching and teacher roles. Prereq.: Admission to Teacher Education Program. F, Sp

355 Introduction to Secondary Schools (3) Aspects of teaching in grades 7-12, including curricular program and roles and responsibilities of secondary school teachers and administrators. Prereq.: Admission to Teacher Education Program. F, Sp

356 Elementary and Middle School Teaching Laboratory Experience (1) Simulation and micro-teaching experiences to develop planning skills and give feedback to students relative to their ability to apply learning to school settings. Prereq.: Admission to Teacher Education Program. Coreq.: 422.

364 Contemporary Issues in Afro-American Education (3) (Same as Afro-American Studies 364.)

404 Problems in Improvement of Instruction (1-3) Special conferences, workshops or inservice programs designed for improvement of instruction. May be repeated. Maximum 6 hours. Satisfactory/No Credit. E

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. F, Sp

419 Teaching Laboratory (3) Learning and practicing research based effective teaching behaviors. Video taping in simulated school settings. F, Sp

421 Elementary and Middle School Science and Social Studies Instruction (3) Methods and materials for teaching science and social studies in elementary and middle schools. Development of functional relationships and individual entities of the two fields. Not open to students with recent course or background in the Teaching of Elementary School Science and/or Social Studies. Prereq.: Admission to Teacher Education Program. F, Sp

422 Elementary and Middle School Teaching Methods I (6) Methods and materials for teaching science and social studies in elementary and middle schools with emphasis on content and curriculum overview. Emphasis will be given to unit planning, daily planning, evaluation, etc., as well as language and content instruction. Prereq.: Admission to Teacher Education Program.

424 Studies in Elementary Education (1-3) Variable topics on teaching in Elementary Education (K-3), Middle Elementary (4-8); and Skills (K-8). Prereq.: Admission to Teacher Education Program. F, Sp

429 Language Arts/Reading in Elementary and Middle Schools (3) Language and language development as applied to teaching of oracy (listening-speaking) and aspects of literacy (reading process/reading and writing). Includes methods and materials. FBS Education students only. 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

434 Topics in Reading Education (1-6) May be repeated. Prereq.: Admission to Teacher Education Program and a course in Reading Education. E

443 Elementary and Middle School Mathematics Instruction (3) Procedures for helping children learn mathematics. Unit planning, daily planning, grouping, general factors related to classroom management. Not open to students with a recent course in teaching of elementary school mathematics. Prereq.: Admission to Teacher Education Program. F, Sp

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

451 Education in Cultural Perspective (3) Contribution of anthropological concepts to understanding of educational processes, major cultural frameworks, selected ethnographic research on process of schooling. F

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

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

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 school. 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, and 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 textbook emphasis on middle school and high school. F, Sp, Su

471 Internship I: Elementary (3-6) Methods and theories of teaching. Internship is completed in local public schools. Prereq.: Admission to Teacher Education Program. F, Sp

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

473 Student Teaching in the Elementary School (3-9) Supervised and directed student teaching in an appropriate school setting. Prereq.: Admission to Teacher Education Program. Coreq.: 472. Internship I. Prereq.: Admission to Teacher Education Program.
Education Program, permission of Mentoring Team, and 203 (1). Satisfactory/No Credit only.

474 Student Teaching, Grades 7-12 (3-10) Semester equivalent to Educational Curriculum and instruction 4710 or 4720. Intended for students in the four year program or equivalent. Not to be substituted for Educational Curriculum and instruction 481 Internship I or 482 Internship II. Prereq: Admission to Teacher Education Program, permission of Mentoring Team, and 203 (1). Satisfactory/No Credit only.

475 Utilization of Instructional Media (3) Basic communication process, need for instructional media, instructional development, selection and utilization of basic media, and basic software production techniques. (Same as Library and Information Science 475.) F, Sp, Su

476 Instructional Media in Elementary Education (1) Basic operation of audiovisual hardware, selection and utilization of materials, and basic production skills needed for effective communication in the elementary classroom. Media Lab experience in production of AV software. F, Sp, Su

481 Internship I: Grades 7-12 (3-6) Methods and theories of teaching. Internship is completed in the local public schools. Prereq: 480 and admission to Teacher Education Program. Satisfactory/No Credit only. F, Su

482 Internship II: Grades 7-12 (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

485 Teaching of Mathematics, Grades 7-12 (3) Preparation of teaching plans, evaluation, materials for teaching mathematics, teaching simulation and directed observation in schools. Prereq: Admission to Teacher Education Program, F

486 Introduction to Instructional Computing (3) Classroom uses of computers, applications for teachers, overview of computer operations and software for teachers of all grades. F, Sp

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. E

496 Teaching Science Grades 7-12 (3) Methods, materials, recent trends in science and environmental education program for secondary schools. Prereq: Admission to Teacher Education Program. F, Sp

ENGINEERING AEROSPACE (108)

345 Aerospace Engineering Instrumentation and Measurement (3) Fundamentals of measurement systems standards; dynamic characteristics of instruments; statical data treatment; transducers; signal conditioning; strain, pressure, temperature and flow measurements. Prereq: 005, ME 541, ECE 301 F, Sp

351 Compressible Flow (3) One-dimensional internal flow with shock waves and non-adiabatic conditions. Two-dimensional external flows. Prereq: Mech. E. 332 and 341. Sp

362 Dynamics/Vibrations (3) Central force motion, transfer orbits, free and forced vibrations of single and multiple degree vibrating system. 411: intro, ESM 251, F


401 Thesis (3) Problem investigation and research. Prereq: Senior standing, F, Sp

422 Aerodynamics (3) Theory and design of aerodynamic bodies for optimal characteristics. Potential flow theory, viscous effects, compressibility effects. Subsonic, transonic, and supersonic airfoils. Prereq: 370, F

423 Viscous Flow (3) Boundary layer theory; laminar and turbulent flow; compressibility effects; numerical solution methods. Prereq: 422 or ME 344 or consent of instructor. Sp


425 Propulsion (3) Principles of propulsion devices; turbojet, ram jet and rocket engines. Prereq: 351. F


429 Aerospace System Design (4) Synthesis and design of a complete aerospace system including economic and technical aspects. Participation in design seminar including formal presentations and design report. Prereq: 426, 428, Sp

431 Mechanical Engineering/Aerospace Engineering Seminar (1) Topics including ethics. Formal oral presentations by students on engineering topics. Prereq: Senior standing. F

449 Aerospace Engineering Laboratory (3) Designing, conducting, and reporting results of experimental exercises. Test stand test demonstrations, analysis of data and formation of conclusions. 3 hours lab per week. Prereq: 345, 351. F

494-495 Selected Topics in Aerospace Science (1-4, 2-2) Current problems and topics in aerospace science, topics in science and engineering for the several areas of aerospace science. Prereq: Consent of instructor. F, Sp

ENGINEERING CHEMICAL (226)


240 Fluid Flow and Heat Transfer (4) Force, energy and mechanical energy balances; flow in tubes, piping systems, packed and fluidized beds; pumping and metering; steady and unsteady state heat conduction; heat transfer in tubes and heat exchangers; radiation. Prereq: 200, Mathematics 231.


340 Mass Transfer and Separation Processes (3) Stage-wise operation; application of analytical, graphical and computer methods to design of stage-wise separatory operations. Differential operations-application of analytical and computer methods to the design of diffusive processes. Applications include gas absorption, distillation, extraction, humidification, ion exchange and membrane separations. Prereq. 330.

360 Process Dynamics and Control (4) Introduction to process modeling and industrial control system design. Method of personal computer programs. Includes flow sheet simulators, statistics, spreadsheets, graphics and process modeling.

401 Chemical Engineering Data Analysis (3) Analysis of experimental data; identification of system extrema; statistical properties of samples; empirical modeling of processes; statistical process control; optimization techniques.

403 Introduction to Optimization (3) Principles and applications of optimization techniques to chemical process design; unconstrained and equality constrained optimizations, linear programming, dynamic programming, and geometric programming. Prereq: Math 241.

410 Chemical Engineering Laboratory (3) Laboratory investigations of mass transfer and chemical reaction phenomena in chemical engineering. Prereq: 340, 360, 450.

415 Computer Applications in Chemical Engineering (3) Introduction to computer solution of chemical engineering problems. Primary focus on the application of personal computer programs. Includes flow sheet simulators, statistics, spreadsheets, graphics and process modeling.


440 Transport Phenomena (3) Overview of momentum, energy, and mass transfer processes, the equations, their analytical and macroscopic balances, applications involving molecular diffusion, including simultaneous mass transfer and chemical reaction. Prereq: 340.

449 Separation Process Technology (3) Multicomponent distillation, theory and computer simulations; humidification; specialized technologies, including membrane separation, crystallization, dialysis, adsorption, ion exchange, etc. Prereq. 340.

450 Chemical Reactor Fundamentals (3) Homogeneous and heterogeneous reaction kinetics; idealized homogeneous reactor models, both for closed and flow systems; corrections for non-ideal residence time distributions; identification of scaling parameters; catalyst effectiveness factors and conversion in fixed bed catalytic reactors. Prereq: 340, Chemistry 350.

461 Advanced Process Dynamics and Control (3) Process and control system simulation and advanced industrial system design. Cascade, feedforward, multivariable, deadtime, adaptive, and nonlinear control system design. Includes computer and laboratory work. Lab. Prereq. 360.

469 Engineering Internship in Process Control (3) Selected students work in small groups on industrial problems in process dynamics and control. Directed by faculty and engineers from host company. Prereq: 360 and consent of instructor.
205 Electrical and Computer Engineering Computations (3) Complex analysis and phase calculus; linear algebra; algorithms for roots of equations; numerical integration; simulation and solution of ordinary differential equations; optimization; and use of the application language MATLAB. Coreq: or Prereq: 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 converters; and microprocessors. Includes high level assemblers; control of analysis using elementary filters; communications between computers; spreadsheet applications; word processing; circuit simulation; and the treatment of electronic projects and design projects. Design content: 2 hours. Prereq: 201, 205, Coreq: 202.

301 Circuits and Electronic Components (3) DC and AC Circuits, Transistors, Transformers, Motors, Generators. For non-majors only. Prereq: Math 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.


331 Electronic Devices (3) Fundamentals of energy bands, theory of p-n junctions, diodes, field effect transistors, and bipolar transistors; device applications, simple power supplies, and amplifiers. Includes laboratory experiments and projects. Design content: 1 hour. Prereq: 202.

332 Electronic Circuits (3) Multistage transistor amplifier biasing; gain stages, and output stages; frequency and transient response of open loop linear amplifiers; fundamentals of feedback networks, operational amplifier applications in basic feedback configurations; basic transistor switching circuits. Includes laboratory experiments and design projects. Design content: 2 hours. Prereq: 331.

341 Fields (3) Coulomb's law, Gauss's law, Ampere's law, Maxwell's equation for electrostatic and magnetostatic cases; Maxwell's equations for dynamic case, linear dynamo-electric systems, wave propagation. Transmission lines. Prereq: 301.

342 Communication Systems I (3) Systems analysis of communication systems. Topics include signal and system classification, Fourier and Hilbert Transform techniques, modulation, demodulation, and sampling theory. Analog modulation techniques including linear, angle, and pulse modulation with applications. Introduction to random variables and stochastic processes. Includes laboratory experiments and projects. Design content: 1 hour. Prereq: 341.

351 Introduction to Logic Design of Digital Systems (3) Boolean algebra and logic design of combinational and sequential circuits. Gate and flip-flop characteristics for TTL and CMOS logic families. Troubleshooting techniques and simulation of circuits using SSI, MSI, and LSI parts. Basic microcomputer architecture and organization. Includes laboratory experiments and design projects. Design content: 2 hours. Prereq: or Coreq: 202.

361 Introduction to Plasma Engineering (3) Particle motion in electric and magnetic fields; collective motions of charged parffles; plasma diagnostics and the Langmuir potential; microwave generators and lasers; radio waves in plasmas and the ionosphere; MHD generators and fusion energy, and plasma etching for microlithography; includes laboratory experiments and projects. Prereq: 302 for ECE majors; or Physics 232 or 236 for all others.

395 Junior Seminar (1) Presentations and discussions related to professional development, and current topics in electrical engineering. Prereq: 202. Satisfactory/No Credit.

405 Digital Signal Processing and Filter Design (3) Discrete-time signals and systems, sampling, discrete Fourier transforms, analog filter characteristics, non-recursive and recursive filter design; and CAD tools for filter design. Includes experiments and projects. Design content: 1 hour.


412 Linear Control System Design (3) Classical and modern techniques for design and compensation of linear control systems. Design content: 2 hours. Prereq: 312.

413 Passive and Active Network Synthesis (3) Network-analysis techniques, passive network driving point synthesis, transfer function synthesis, approximation theory, topics in active network synthesis. Design content: 3 hours. Prereq: 312.


422 Machines (4) Dynamic behavior of rotating machines, efficiency, loss components, design of operation of d.c. machines; response to different waveforms in supply; describing equations for a.c. machines and their numerical solutions. Includes laboratory experiments and projects. Design content: 1 hour. Prereq: 321.

423 Power Electronics (4) Principles and characteristics of power semiconductor devices, single-phase and polyphase phase-controlled converters, converter control techniques, semiconductor components, dc-to-dc converter principles, industry applications. Includes laboratory experiments and projects. Design content: 1 hour. Prereq: 321.


425 Direct Electrical Energy Conversion (3) Principles and practices of energy conversion devices and interfacing them to loads. Includes photovoltaics, MHD, and fuel cells. Design content: 2 hours. Prereq: 321, 331.

431 Digital and Analog Integrated Electronics (4) Basic processing and fabrication of active and passive components for monolithic integrated circuits; characteristics of bipolar, MOS and JFET transistors; standard digital integrated circuit designs; standard digital logic circuits including TTL, ECL, Schottky, NMOS, CMOS, and GaAs gates and arrays; design concepts for op-amps, comparators, references, and oscillators, and other linear functions. Includes laboratory experiments and design projects. Design content: 2 hours. Prereq: 425.

432 Analog Signal Processing Electronics (4) Transducer signal and interface characteristics; analog integrated circuit design, instrumentation, and isolation amplifiers, rms and logarithmic converters, multipliers, and function generators; integrated circuit applications including active filters, level and phase detection, multiplexers, modulation and demodulation, sample and hold, and comparators. Includes laboratory experiments and design projects. Design content: 2 hours. Prereq: 432.

433 Electronic Amplifiers (4) Feedback amplifier principles; wideband linear amplifier design; radio frequency and audio power amplifier design; linear regulated power supply design; switching regulator principles; oscillator principles. Includes laboratory experiments and design projects. Design content: 2 hours. Prereq: 432.

441 Communication Systems II (3) Probability, random variables, and random processes as applied to communication systems. Analog modulation in the presence of noise. Digital communication concepts including binary and M-ary signaling, multiplication, non-coherent and coherent demodulation techniques in the presence of noise and matched filtering. Information and Coding Theory. Includes laboratory experiments and projects. Design content: 1 hour. Prereq: 342.


443 Microwave Circuits and Electronics (3) Scatter function description of circuits to include isolators and amplifiers, couplers and power dividers, circulators, phase shifters, and power combining systems. Power generation and amplification by vacuum and solid state (bulk and junction) devices. Microwave switching, isolating, multiplexing devices, transmission line and waveguide components. Includes laboratory experiments and projects. Design content: 1 hour. Prereq: 341.


451 Microprocessors in Computer Engineering (4) Project oriented using a microcomputer kit having a monitor program and development system with cross-assembler and application program capability. Interfacing hardware/software trade-offs in interrupt driver applications. Grade is dependent upon number of programs submitted. Includes homework, projects, and design projects. Design content: 3 hours. Prereq: 351.

452 Organization and Design of Digital Systems and Computers (4) Considerations for hardware organization of digital systems and computers, including CPU and software structures, control unit organization, storage systems, and the I/O channels. Microprogramming the control unit and external interrupt structures. Includes laboratory experiments and design projects. Design content: 3 hours. Prereq: 351.

453 Data Acquisition Systems (4) Digital-to-analog conversion techniques; quad and R-2R ladder networks; error analysis of A/D converters; sample/hold circuit design; details of digital conversion techniques; open loop systems; direct and matrix converters; closed loop systems; dual slope and successive approximation; error analysis of A/D converters. Drift and noise in receivers, digital-to-analog and analog-to-digital converters, resistance networks, error analysis of A/D converters, design content: 2 hours. Preq: 353.

454 Open System Interconnection (OSI) Protocols (4) OSI reference model based networks. Manufacturing Automation Protocol (MAP) and Technical Office Protocol (TOP) includes material from International Standards Organization (ISO) standards, Draft International Standards (DIS) and Working Papers, IEEE standards, MAP and TOP specifications. Includes laboratory work on MAP 2.x and 3.0 that supports programmable logic controllers and personal computers using Manufacturing Executing Service (MES). Special projects with manufacturing emphasis including use of @Factory, a language programming background required. Design content: 3 hours. Prereq: 332, 351.

455 Open System Interconnection (OSI) Protocols (4) OSI reference model based networks. Manufacturing Automation Protocol (MAP) and Technical Office Protocol (TOP) includes material from International Standards Organization (ISO) standards, Draft International Standards (DIS) and Working Papers, IEEE standards, MAP and TOP specifications. Includes laboratory work on MAP 2.x and 3.0 that supports programmable logic controllers and personal computers using Manufacturing Executing Service (MES). Special projects with manufacturing emphasis including use of @Factory, a language programming background required. Design content: 3 hours. Prereq: 332, 351.

461 Plasma Magneto-hydrodynamic Engineering (3) The MHD approximation; MHD waves and instabilities; MHD in static and dynamic systems; MHD in pulsed and steady-state power generation; fusion energy, industry, and astrophysics. Design content: 1 hour. Prereq: 361.

462 Plasma Kinetic Theory Engineering (3) Introduction to kinetic theory; beam-plasma systems; driven waves in a plasma; transition from multiple beams to a continuum; Vlasov and Landau theory; microwave generation in plasmas and traveling wave tubes; free electron lasers; circular geometry; the gyrotrode and Oran theory. Design content: 1 hour. Prereq: 361; 461 or consent of instructor.

463 Introduction to Fusion Energy (3) High temperature plasma physics relevant to fusion plasmas, prin-
ciples of fusion reactors, and engineering physics concepts of fusion reactors. Prereq: 361 for ECE majors, or consent of instructor. (Same as Nuclear Engineering 463.)

464 Introduction to Fusion Energy (3) Continuation of 463. Includes principles and phenomenology of tokamak reactor design and operation, advanced fusion fuels, fusion technology, plasma engineering, and fusion reactor design studies. Includes design projects which integrates material in 463 and 464. Design content: 2 hours. Prereq: 463 or consent of instructor. (Same as Nuclear Engineering 464.)

469 Plasma Laboratory (1) Experiments and design project involving material covered in 461 and 462. Design content: 1 hour.


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

494 Special Problems in Electrical Engineering (1-3) Problems in Electrical Engineering involving library and experimental research. May be repeated. Maximum nine hours. Prereq: Consent of instructor.

495 Senior Seminar (1) Topics vary. May be repeated once. Prereq: Senior standing or consent of instructor. Satisfactory/No Credit or letter grade.

ENGINEERING INDUSTRIAL (556)

200 Fundamental Computer Applications in Industrial Engineering (3) Applications of modern computer hardware and software to enhance professional productivity. Spreadsheets, word processing, graphics, and library IE programs applied to Industrial Engineering. Includes FORTRAN programming and numerical analysis. Prereq: Basic Engr. 101.

201 Sophomore Seminar (1) Introduction to Industrial Engineering and its methodologies. Prereq: Sophomore standing.


301 Operations Research (3) Introduction to mathe- matical programming. Linear programming, linearization theory, linear programming (simplex method, transpor- tation and assignment problems) and dynamic program- ming. Prereq: Mathematics 231 and 202.

302 Work Methods and Measurement (3) Job analy- sis, job evaluation, evaluation of wage structures, design of workplace layouts, flow charts, activity charts and meth- ods improvement. Work measurement tools such as time study, predetermined time systems, work sam- pling, data analysis, development of standard time data, learning curves and wage incentive systems. Prereq: Statistics 251.


305 Motion and Time Study (3) Design of work meth- ods including analysis, improvement, and timing of work and determining standards. For non-industrial engineer- ing students. Prereq: Junior standing.


302 Production System Planning and Control (3) Theory and application of forecasting systems including regression and time series models. Independent de- mand inventory models, including development of a material requirements plan. All modules of Manufacturing Resource Planning (MRP) Systems; Master Production Scheduling, Re- source Availability, and Master Production Planning Material and Inventory File Structures, Material Requirements Plan- ning, Capacity Planning, Shop Floor and Purchase Order Control, Overview of Just-in-Time Inventory Concepts and MRP's role in manufacturing automation. Prereq: 301.

303 Production Facilities Design and Material Handling (3) Design of production facilities including plant layout and analysis and planning for major manufacturing processes using the available simulation languages. This includes office layout and service areas. Principles applicable to design of facilities for such diverse groups as hospitals, bank- ing, and retailing. Design and class hours: 3. Prereq: 302.

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

305 Engineering Economy (2) Methods and problems in selection or replacement of equipment. Decisions among engineering alternatives involving capital recov- ery, economic life of equipment, and rate of return on investment.


400 Predetermined Time Systems (3) 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 techn- niques and case studies in forecasting and planning. Performance measures for shop job and flow shop scheduling. Techniques for planning production schedules and a comparison of different material. Require- ment Planning and Just-In-Time philosophies. Prereq: 402.

412 Quantitative Methods in Project Management (3) Project planning and control based on network- ing and precedence diagramming methods. In- cludes resource allocation and time-cost trade-off algo- rithms, multi-project control, computer applications, andPERT methods of handling uncertainty in activity time estimates.

413 Research Methods in Industrial Engineering (3) Methods to collect and analyze data as related to industrial engineering. Topics such as process control, statistics, industrial research design, experiment sampling, single subject experimental designs, classical experimental design methods, and time series models of experiment- ers. Validity and reliability concepts as related to measurement and collection of data. Strategies to control- ral rival hypotheses such as randomization, matching, yoking, fixing variables, and building extraneous vari- ables. Experimental design of appropriate ex- perimental designs for given research situations and to analysis of messy data. Prereq: 300 and senior standing, Statistics 251.

414 Laboratory and Methodology in Human Factors Engineering (3) Principles of research design and investi- gation of human factors problems. Instrumentation and measurement of human capabilities and limitations, environmental factors that affect work such as tempera- ture, humidity, lighting and noise. Measurement of task loading effects and effects of interface design on human performance. Student-selected group project. Prereq: 304 and senior standing.

421 Informational Systems I (3) Systems engineering approach to design, development, implementation, and evaluation of systems of information. Emphasizes infor- mational aspects of IE systems. Study of data structures and database management systems. Prereq: 200 and senior standing.

422 Senior Industrial Engineering Problems Analysis (3) Application of Industrial Engineering to field assignments in local organizations, including problem definition, analysis and presentation. Prereq: 402, 403 and 405.


440 Total Quality Management (3) The philosophy of continuous improvement in organizations including management and implementation issues; definition, identi- fication and analysis of systems as compared to pro- cess analysis and improvement; flowcharts, pareto dia- grams, cause and effect diagrams and the seven new tools; data collection and control strategies; capability analysis, quality of design; components of variation; measurement issues; issues relevant to continuous pro- cesses; managing quality in short-run environments; 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 experi- ence. Prereq: IE 350 and senior standing or consent of the instructor.

494-495 Special Topics in Industrial Engineering (3,3) Recent developments in Industrial Engineering including new areas of application, new research tech- niques 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, sample preparation for microscopic examination; word processing and graphics useage, 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, inc. crystalline and non-crystalline forms; rubber elasticity, viscoelastic behavior, creep, fatigue. Prereq: 201, 303, or consent of instructor. Sp (Same as Engineering Science and Mechanics 323.)

303 Thermodynamics of Solids (3) Applications to solids of free energy, activity; Raoult's and Henry's laws; glasses, ceramics, and polymers; statistical mechanics, lattice-gas rule; multicomponent systems. Prereq: Chem. Engr. 200. Sp

310 Theory and Processing of Electronic Materials (3) The quantum theory of electrons in solids: the free


340 Principles of Polymeric Materials (3) Synthesis and molecular structure of polymers; polymerization kinetics; molecular weight and molecular weight distribution; synthesis and processing of blends; recrystallization and glass transitions; crystallization kinetics; mechanical properties; rheology and processing. Prereq: 201, F.

360 Principles of Ceramic Materials (3) Characterization of ceramic materials as to their crystal structure, their mechanical, electrical, and optical properties. Ceramic fabrication processes from the initial green body fabrication through the firing state. Prereq: 201.

400 Materials Seminar (1) Professional and ethical considerations, safety, patents, product liability.

405 Structural Characterization of Materials (4) X-ray diffraction and fluorescence; scanning and transmission electron microscopy; microanalytical techniques.

421 Mechanical Behavior of Materials II (3) Description of stress and strain; linear elastic constitutive equations, isotropic and anisotropic moduli in various materials; yield criteria; plasticity; plastic strain; crazing; plastic deformation; solidification, gas-metal processing. Prereq: 303, F.

422 Chemical Process Metallurgy (3) Application of chemical thermodynamics to metallic processing. Ferrous and nonferrous processing; melt purification; deoxidation; annealing; metal equilibria, solidification, gas-metal processing. Prereq: 303, F.

425 Metallurgical Applications in Manufacturing and Processing (3) Fabrication methods, standards and specifications, mechanical tests, thermal fatigue, and extrudate swell. Selection of materials for forging, drawing, extrusion, and forging. Manufacturing and processing for finished and semi-finished products; casting; deformation; welding; fabrication of finished products; testing; corrosion control. Prereq: 201.

426 Materials Joining (3) Processes for joining metals, polymers and ceramics; mechanical adhesive, fusion, solidification; crystal structure and morphology, structure-property relationships with respect to crystallization kinetics; deformation mechanisms; types of deformation processes; yield criteria; processing of alloys. Prereq: 340 or consent of instructor. Sp.

428 Polymers (3) Rheological measurements; flow through tubes and slits, including end effects and extrudate swell; selected applications, including screw extrusion, injection molding, synthetic fibers, including structure development. F.

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

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

472 Fundamental Principles of Composite Materials (3) Physical principles basic to the design, manufacture and application of fiber reinforced polymers, metals and ceramics. Prereq: 352 or equivalent. (Same as Engineering Science 352). F.

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

475 Fracture-Safe Design (3) Same as Engineering Science 423.

491 Materials Design I (3) Analysis of materials requirements and performance in engineering structures and components; design aspects of materials applications and processes; standards, legal issues, failure analysis. Prereq: Senior standing, F.

492 Materials Design II (3) Design projects involving materials selection and performance. Prereq: 491, F.

494 Special Project Laboratory (1-3) Group or individual investigation of problems related to materials science and engineering. May be repeated to a maximum of 6 credits. Prereq: 201, 202, 203 and consent of instructor.

495 Thesis (3) Research problems in materials science and engineering with prior approval of a professor. May be repeated once. Prereq: Senior standing or consent of professor.

496 Special Topics in Materials Science and Engineering (1-3) Recent developments in materials research, development and/or applications. Prereq: Senior standing or consent of instructor.

ENGINEERING MECHANICAL (650)

331 Thermodynamics (3) Energy and laws governing energy transformations; thermodynamic properties; thermodynamic cycles; applications to engineering problems. Prereq: Chemistry 130, and Mathematics 531. F, Sp, Su.

332 Thermodynamics II (3) Properties of gases and mixtures; chemical reactions; equilibrium; compressible flow; applications to engineering problems. Prereq: 331. F, Sp.

341 Fluid Flow (3) Development of mass, momentum, and energy principles for fluid systems; dimensional analysis, internal and external viscous flows. Prereq: ES&M 231, Mathematics 231. F, Sp, Su.


345 Mechanical Engineering Instrumentation and Measurement (3) Fundamentals of measurement systems; standards; dynamic characteristics of instruments; statistical data treatment; transducers; signal conditioning; strain, pressure, temperature and flow measurements. Coreq: 365; Prereq: 341, ECE 301. F, Sp, Su.


401 Energy Conversion Systems (3) Fossil fuel energy conversion systems with emphasis on coal technology. Coreq: 476.

416 Turbo-Machinery (3) Basic principles of turbomachinery, application of thermodynamic systems of analysis, design, performance evaluation. Prereq: Aerospace Engr. 351.

422 Environmental Noise (3) Acoustics - measurements and control of noise in industrial and community environments. Prereq: Senior standing in engineering or consent of instructor.

431 Seminar (1) Topics related to engineering including ethics. Formal oral presentation by students on engineering topics. Prereq: Senior standing.

445 Lubrication (3) Hydrodynamic theory of lubrication of sliding bearings; application of Navier-Stokes equations to infinite and finite bearings; analytical and numerical solutions; applications to design. Prereq: 344, Aerospace Engr. 201.

449 Mechanical Engineering Laboratory (3) Designing, conducting and reporting results of experimental exercises. Test standards and specifications. Analysis of data and formulation of conclusions. 3 hours per week. Prereq: 332, 344, 345, Coreq: 475. Su.


455 Introduction to Machine Design (2) Engineering economy, optimization, design for automation, reliability, patents and product liability; design of mechanical engineering solid mechanics systems. Participation in team design effort; requires design report. Prereq: 363, 365, F.

456 Introduction to Thermal Design (2) Engineering economy, optimization, design for automation, reliability, patents and product liability; design of mechanical engineering thermal-fluid systems. Participation in team design effort; requires design report. Prereq: 332, 344, F.


462 Tool Design (3) Principles underlying tool and die design; design for high volume production; work holding fixtures; computer-aided design; selection of tool material; plastics production. Prereq: Mech. Engr. 366 or Industrial Engr. 404, ES&M 321.


471 Refrigeration and Air Conditioning (3) Vapor compression and absorption systems; air conditioners, heat pumps; psychrometric processes; air washers; cooling towers; solar radiation; building heat transmission. Prereq: 332, 344.

474 Solar Energy Utilization (3) Nature and availability of solar radiation; review of heat transfer topics pertinent to solar energy collection and use; design analysis of solar energy collectors and method of storage, selected applications. Prereq: 392, 344, F.

475 Thermal Engineering (3) Thermal systems with emphasis on turbochargers, heat exchangers, combustion and system analysis and design including second law and economic analysis. Prereq: 332, 344, F.

479 Thermal Engineering Design (4) Design of a complete thermal-fluid system including economic, technical, and optimization aspects. Participation in team design effort including formal presentations and design report. Prereq: 456, 475.


484-485 Selected Topics in Mechanical Engineering (1-4) Problems and topics related to developments and practices in mechanical engineering. Prereq: Consent of instructor. F, Sp.
ENGINEERING NUCLEAR (716)

201-202 Seminar (1,1) Topics related to nuclear engineering. Satisfactory/No credit.


204 Thermodynamics (3) Second law, development of entropy concept and availability. Various power plants cycle and systems. Prereq: 203.

301 Introduction to Nuclear Engineering (3) Nuclear systems, radioactive decay, cross sections, flux, health physics, reactor theory. Prereq: Physics 232, Mathematics 231.

304 Nuclear Engineering Laboratory (3) Radiation detection and counting instrumentation, counting statistics, half-life and decay schemes, gamma spectrometry, heat transfer experiments. Prereq: 305. Coreq: 470.

305 Energy Transport (3) Development of differential and integral energy conservation; conduction and convection heat transfer including numerical methods; application to nuclear reactor fuel elements, reactor cores, and heat exchangers. Prereq: 204.

306 Designing for Energy Transport (3) Radiation heat transport; hydromechanics and heat transport in boiling and condensing systems; boiling and condensation phenomena, heat exchanger and nuclear reactor thermal design; steam generator design. Prereq: 305.

342 Thermal Science (3) Fluid statics; conservation equations of mass, momentum, and energy; applications to fluid flow in pipes, pipe networks, and heat exchangers; convection, radiation, and forced convection. For non-departmental majors only.

343 Nuclear Engineering Laboratory (3) Cross-section measurement, diffusion properties of neutrons, critical loading experiments, reactor kinetics, one-dimensional reactor and heat exchanger thermal design; steam generator design. Prereq: 305.

347 Radiation Shielding (3) Types of radiation sources, fundamentals of gamma ray and neutron attenuation, biological effects, approximate methods of shield design, shielding and heat exchanger, neutron poisoning, nuclear doses. Prereq: Physics 232, Mathematics 231.

401 Nuclear Fuel Management (3) Topics related to nuclear fuel cycle including mining and milling, fuel fabrication, core management, reprocessing and waste disposal. Economic and regulator issues. Prereq: 306.


421 Introduction to Nuclear Criticality Safety (3) Fundamentals of nuclear criticality safety; criticality accidents; safety standards; overview of experiments, computational methods, and applications. Prereq: 301.

463 Introduction to Fusion Energy I (3) (Same as Electrical and Computer Engineering 463.)

464 Introduction to Fusion Energy II (3) (Same as Electrical and Computer Engineering 464.)

470 Nuclear Reactor Theory I (3) Fundamentals of reactor physics relative to cross sections, kinematics of elastic scattering, neutron thermal, and neutronic variables; reactor systems and nuclear data. Analytical and numerical methods applicable to general criticality problems, eigenvalue searches, perturbation theory, and the multigroup diffusion equations. Prereq: 301.

471 Nuclear Reactor Theory II (3) Thermal spectrum computational methods: heterogeneous effects in fast and thermal spectra; considerations in reactor core design; equilibrium, nuclear kinetic, thermal and neutronic variables; power distribution calculations and readaptation control methods. Prereq: 470.

472 Nuclear System Design (4) First order design and analysis of a nuclear system, interface with non-nuclear aspects of system design and simulation, reliability, availability, and safety. Prereq: 471.

484 Special Topics in Nuclear Engineering (3) Problems related to recent developments and practice. Prereq: Senior standing, consent of instructor. May be repeated.

ENGINEERING SCIENCE AND MECHANICS (335)


271 Introduction to Biomedical Engineering (3) Overview of biomedical engineering: anatomy, physiology, biochemistry, biophysics and control, instrumentation, and biomechanics. 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 ES&M.


322 Mechanics of Materials II (3) Analysis and design of beams, singularity functions, energy methods, thick-walled pressure vessels, inelastic bending and torsion, theories of failure and fatigue. Prereq: 321.


351 Computational Mechanics I (3) Integration of fundamental physical laws and mathematical methods of analysis with emphasis on numerical methods and digital computer solutions of engineering problems. Prereq: 321, 341, and 121, 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.


427 Principles of Nondestructive Testing (3) Principles and theory of nondestructive testing methods; liquid penetrant, magnetic particle, eddy current, ultrasound, flaw detection, and radiographic methods. Laboratory. Prereq: 321, Materials Science 201. (Same as Physics 425.)

428 Computational Mechanics in Design (3) Integration of fundamental physical laws and mathematical methods of analysis with emphasis on numerical methods and digital computer solutions of engineering problems. Prereq: 321, 341, and 121, Mathematics 241.

454 Computational Mechanics (3) Integration of fundamental physical laws, mathematical methods and computational techniques necessary to develop engineering analyses and design capabilities. Prereq: 321, 341, 342, 470.

455 Projects in Design (3) Conceptualization, analysis, design, and presentation of engineering projects. Prereq: Senior standing in ESM; 301, 321, 341, and ME 344.

457 Computational Mechanics in Design (3) Computational techniques applied to specific engineering design problems. Prereq: 321, 452, 453.

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

463 Photomechanics (3) Photelasticity, photoelastic coating method, Moiré method, interferometry, and holography. 2 hours and laboratory. Prereq: 321, Physics 232.

465 Dynamic Data Acquisition (3) Use and calibration of instrumentation for measuring and recording dynamic events; Fourier analysis, transfer function analysis, digital signal processing, transduction, experimental parameter estimation with applications to modal vibration analysis. 2 hours and laboratory. Prereq: 321, ECE 301.

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 character, medical electronics, signal conditioning, data readout and storage devices, evaluation of commercially available systems, selection and procurement methods, custom-designed systems, equipment maintenance and control programs for hospitals. Ethical issues and professionalism in clinical engineering. Prereq: 271, ECE 301.

473 Biomechanics (3) Mechanical properties of living tissues, biomechanics of injury, mechanics of prostheses, and prosthetics; material compatibility of prosthetic devices; biomechanical problems related to impact. Prereq: 321.

476 Design of Artificial Internal Organs (3) Design, development and evaluation of artificial internal organs; analysis of transport processes in therapeutic devices for design optimization; review of currently available devices; federal regulation and ethical considerations. Prereq: 341, Mathematics 231.


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

ENGLISH (339)

101 English Composition I (3) Expressive, informative, and persuasive writing, with emphasis on invention, organization, style, and revision; practice in writing journals, letters, and reports, as well as expository and persuasive essays, intensive study of prose for meaning and ways of expressing meaning; conferences on individual writing problems. A.B.C.NC grading.

102 English Composition II (3) Analytical writing based on the study of literature and the study and practice of research writing; individual conferences. Prereq: 101, A.B.C.NC grading.

303 Writing Workshop (1) Writing Center-based course for any student wanting additional instruction while enrolled in English 101 and for students automatically enrolled in 103 on the basis of placement scores. Individual instruction in mechanics, paragraph development and essay structure. To receive credit, a student must participate at least two hours per week and must allo
pass the 101 class in which he or she is currently enrolled. S/NC grading.

104 Writing Workshop II (1) Self-paced Writing Center course for students remaindered to it at the beginning of the semester by their English 102 instructors. Individual in-class instruction in critical reading and in developing and documenting the research paper. To receive credit, students must participate at least two hours per week and must also pass the 102 class in which they are enrolled. Prereq: English 101. S/NC only.

118 Honors English Composition (3) No open enrollment. Students will be automatically enrolled on the basis of placement scores and performance on the placement exam taken at registration. Grading scale and workload the same as regular sequel. Expository and analytical writing based on the study of literature and on-fiction prose. Individual conferences on research writing. Individual conferences. Students receiving a grade below B in 118 will complete a year’s work in English Composition by taking 102. Students receiving a grade of A or B will complete their freshman English requirements—by choosing 102, a sophomore literature course taken in the English Department, or 395. A, B, C, GC grading.

121 English Grammar Review for Non-Native Speakers (4) Comprehensive review of English grammatical structures. Extensive practice in reading and writing. Required during their first semester in the University of all non-native English speaking students. Who demonstrate an understanding of the English language, grammar, and mechanics. Individual conferences. Admission to this course is by the English Placement Exam only. Meets four hours a week. A,B,C,F grading.

131 Composition for Non-Native Speakers of English I (3) Paragraph organization and development with emphasis on informative and persuasive writing. Includes grammar and mechanics. Individual conferences. Admission to this course is by the English Placement Exam only. A,B,C,NC grading.

132 Composition for Non-Native Speakers of English II (3) Writing based on reading and discussion. Analysis of works of literature. Emphasis on research techniques and the development of research papers. Individual conferences. Admission to this course is by the English Placement Exam only. A,B,C,NC grading.

201 British Literature I: Beowulf through Johnson (3) Major literary works from three periods: Middle Ages, Renaissance, and Restoration and Eighteenth Century. Writing emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

202 British Literature II: Wordsworth to the Present (3) Major literary works from the periods: Romantic, Victorian, and the Twentieth Century. Writing emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

207 Honors British Literature I (3) Enriched section of 201 designed for students with a 3.25 or higher GPA.

208 Honors British Literature II (3) Enriched section of 202 designed for students with a 3.25 or higher GPA.

221 Literature of the Western World I: Ancient, Medieval, and Renaissance (3) Writing emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

222 Literature of the Western World II: Enlightenment, Romanticism, and Modern (3) Writing emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

227 Honors Literature of the Western World I (3) Enriched section of 221 designed for students with a 3.25 or higher GPA.

228 Honors Literature of the Western World II (3) Enriched section of 222 designed for students with a 3.25 or higher GPA.

231 American Literature I: Colonial Era to the Civil War (3) Development of American literature from its beginnings to the Civil War. Writing emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

232 American Literature II: Civil War to the Present (3) Development of American literature from Civil War to the present. Writing emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

233 Major Black Writers (3) Black American literature as a literary tradition. Writing emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

237 Honors American Literature I: Colonial Era to the Civil War (3) Enriched section of 231 designed for students with a 3.25 or higher GPA.

238 Honors American Literature II: Civil War to the Present (3) Enriched section of 232 designed for students with a 3.25 or higher GPA.

248 Honors Introduction to Poetry (3) Enriched section of 251 designed for students with a 3.25 or higher GPA.

251 Introduction to Poetry (3) Poetry as a distinct mode of artistic expression. Critical tools for perception of reading of poems. Writing emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

252 Introduction to Drama (3) Critical tools for perceptive reading of play texts. Writing emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

253 Introduction to Fiction (3) Fiction from the eighteenth through the twentieth centuries, emphasis on the novel. Critical tools necessary for judging values of fiction. Writing emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

258 Honors Introduction to Drama (3) Enriched section of 252 designed for students with a 3.25 or higher GPA.

263 Introduction to Creative Writing (3) Practice in writing poetry and fiction, combined with study of models and techniques. Writing emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

268 Honors Introduction to Fiction (3) Enriched section of 253 designed for students with a 3.25 or higher GPA.

268 Introduction to Film Studies (3) Selected world cinema feature films. Critical techniques necessary for understanding and analysis of narrative cinema. Basic elements of film expression and contours of film history. Writing assignments. (Same as Cinema Studies 261.)

295 Business and Technical Writing (3) Principles of written communication in science and business.

301 British Culture to 1660 (3) English literature in the context of parallel developments in art, architecture, music, and social and intellectual history. Writing emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

302 British Culture: 1660 to present (3) English literature in the context of parallel developments in art, architecture, music, and social and intellectual history. Writing emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

303 British Culture: 1660 to present (3) English literature in the context of parallel developments in art, architecture, music, and social and intellectual history. Writing emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

306 Introduction to Shakespeare (3) May not be used by English majors to fulfill the pre-1600 literature course requirement.

323 Women in American Literature (3) Women as writers and as subjects in American literature from its beginnings to the present. (Same as Women’s Studies 323.) Writing emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

333 Black American Literature and Aesthetics (3) Black American literature and aesthetics since 1899, with emphasis on cultural evaluations and the principles of being "American." Writing emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

334 Film and American Culture (3) American films as both works of art and social documents. Relationship between the medium of film and American culture in the twentieth century. (Same as American Studies 334 and Cinema Studies 334.) Writing emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

342 Advanced Expository Writing (3) Strategies of writing on personal and academic subjects. Discussion of student and professional writing. Open to sophomores with instructor’s consent.

359 Writing Poetry (3) Introduction to writing poetry.

364 Writing Fiction (3) Introduction to writing novels and short stories.

365 Writing Drama and the Screenplay (3) Introduction to writing one-act and full-length plays, as well as screenplays.

371 Foundations of the English Language (3) Phonology, morphology, and syntax of English. History of the English language to 1800. (Same as Linguistics 371.)

372 The Structure of Modern English (3) Survey of approaches—traditional, descriptive, and generative—transformational—to the structure of modern English. (Same as Linguistics 372.)

376 Colloquium in Literature (3) Methods and objectives of literary study; conferences to plan student’s program in major.

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

381 Introduction to Folklore (3) Essential terms and concepts in modern folklore-folk-life studies. Emphasis on North American materials: folklore, folktale, myth, legend, folktales, riddle, legend, epic, fairy tale, and architecture. (Same as American Studies 442.)

389 Literature of the English Bible (3) Types of literature in the Bible: legend, folktale, history, biographical, poetry, prophecy, apocalyptic. (Same as Religious Studies 489.)

398 Junior-Senior Honors Seminar (3) Designed for (but not limited to) students with a 3.2 or better GPA, this course examines social and intellectual forces and concepts that have shaped literature in English from medieval to recent times.

568 Renaissance Drama (3) English theatre between 1580 and 1640. Representative plays by Shakespeare’s contemporaries (e.g., Marlowe, Webster, Jonson).

400 Spenser and his Contemporaries (3) Principal achievements in prose and poetry of sixteenth-century authors such as Spenser, Wyatt, Marlowe, More, Sidney and Bacon.

410 Milton, Donne and their Contemporaries (3) Principal achievements in prose and poetry of the first two-thirds of the seventeenth century (such as the poetry of Milton, Donne, Marvell, and the prose of Browne, Bacon, Walton).

411 Restoration and Eighteenth-Century Poetry and Prose (3) Dryden, Swift, Pope, Johnson, and their contemporaries with emphasis on major works such as Macflecknoe, Rape of the Lock, Gulliver’s Travels, and Rasselas.

432 British Drama from 1660 to 1800 (3) Playwrights from Shakespeare to Goldsmith and Sheridan, including formal developments such as heroic play, cynical comedy, afoetive tragedy, and exemplary drama.

433 The Eighteenth-Century British Novel (3) Selected British novels from Defoe and Austen.

434 Romantic Poetry and Prose I (3) Emphasis on Wordsworth, Coleridge, and Blake, with readings from Lamb, De Quincey, and other prose writers.
FOOD SCIENCE AND TECHNOLOGY (390)

140 Food Technology and Science Seminar (1-2) Integration into the academic aspects of the campus, including student involvement, student organization, and the nature and purpose of a college education, case studies, counselling, and financial aid. Satisfactory/No Credit grading only. Meets weekly.

401 Meat Technology and Science Seminar (1-2) Integration into the academic aspects of the campus, including student involvement, student organization, and the nature and purpose of a college education, case studies, counselling, and financial aid. Satisfactory/No Credit grading only. Meets weekly.

410 Peer Mentoring Seminar (2) Designed to prepare the upperclass student to effectively mentor the freshman student. Includes training on the development of mentoring skills, cognitive and developmental theories of the college-age student, and the investigation of the problems of transition. Satisfactory/No Credit grading only. Meets weekly.

FOOD SCIENCE AND TECHNOLOGY (390)

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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. Coreq: 312, 313 and 315, or consent of instructor. F

416 Planning and Management of Forest, Wildlife and Fisheries Resources (3) Integrated forest, wildlife and fishery management through the development of 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) Introduction to French. Must be taken in sequence. Language Laboratory required.

199 The French Language and World Business (1) The course will examine the importance of foreign trade at the local, state and national levels. An interdisciplinary team of experts from the Colleges of Business and Liberal Arts will provide an overview of the value of language study and international cultural awareness in world business. Restricted to students majoring in the Program in Language and World Business. See the Director for further information.

210 Intermediate French Transition (3) A thorough study of the fundamentals of French language for those who have completed two or more years of high school study but whose students indicate that they are not prepared for the 211-212 sequence. Special emphasis on developing communicative proficiency in French. The course will meet five hours per week and will not count toward the College of Liberal Arts intermediate-level foreign language requirement. For elective credit only.

211-212 Intermediate French (3,3) Sequence stresses the reading, writing, listening and speaking of French to intermediate-level foreign language requirement. For elective credit only.

217-218 Honors: Intermediate French (3,3) For students of superior ability in French. Incoming freshmen admitted on basis of diagnostic test, high school average, and performance on ACT. Class held to a maximum of 15 for individual attention. Students follow enriched program with French literature, including literary selections. Students with a grade of A in 211 may enter 218 with permission of instructor. Credit for 300 given to students receiving a grade of A or B in the course.

291-292 French Literature in English Translation (3,3) From the origins through the Age of Voltaire. Song of Roland, Rabelais, Montaigne, the Classic period, and Voltaire. 292-292R, 19th and 20th centuries. Flaubert, Zola, Proust, Camus. Must not be counted toward the major or minor. Writing-emphasis course: at least one in-class essay examination and 3000 words of written work. Prerequisites: French 212, 218 or equivalent.

300 French Transition (2) Development of linguistic skills necessary for satisfactory work in courses above 300. Recommended for students who would benefit from additional training beyond 212 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 and advanced readings. Open to graduate students prior to completion of 300. Must be taken in sequence. Upper-division students desiring reading knowledge of the language. Undergraduate credit only. Not for credit for those having had 111-112 or equivalent. Auditors.

311-312 History of French Literature (3,3) Chronological view of French literature in relation to the specific historical developments that have influenced it. Prereq: 212, 218 or equivalent.

313 Aspects of French Literature (3) Study of masterpieces from the great literary movements and counter-currents in French literature. Prereq: 212, 218 or equivalent.

324 Women in French Culture (3) Role of women in shaping French history and culture. Feminists (George Sand), royal mistresses (Mme de Maintenon), intellectuals (Mme de Stael), actresses (Sarah Bernhardt), scientists (Marie Curie), Tautau in English. May not be counted toward the major or minor. (Same as Women's Studies 324.)

341-342 Intermediate Composition and Conversation (3,3) Grammatical analysis of modern French prose; review of grammatical principles and their application in translation from English to French, 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 culture related to good business practices. Either 345 or 347 may be applied toward the major but not both. Prereq: 341 or consent of instructor.

400-401 Consecutive and Simultaneous French-English and English-French Translation (3,3) Consecutive and Simultaneous Translation. The course will meet five times per week and will not count toward the College of Liberal Arts intermediate-level foreign language requirement. For elective credit only. Prereq: 212, 218 or equivalent.

411 French Literature of the 16th Century (3) High points of French literature. Excerpts from Racine and Montaigne; readings of poems from the writers from Lyon and members of the Pléades. Prereq: 212, 218 or equivalent.

412 French Literature of the 17th Century (3) Major works of the Enlightenment. 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.

417 Readings in French Literature (3) Introduction to the major works of the Enlightenment. Prereq: 212, 218 or equivalent.

420 French Cinema (3) The French cinema from its earliest days through the New Wave directors. Prereq: 212, 218 or equivalent. Can be applied to major. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom. (Same as Cinema Studies 420.)

421 Phonetics (3) Foundation in the science of phonetics. Practical exercises and individual performance. Prereq: 212, 218 or equivalent. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom. (Same as Cinema Studies 420.)

422 Advanced Grammar (3) Improving one's own style of speaking and writing French. May not be counted toward the major or minor.

423-424 Advanced Conversation (1,1) Informal conversation with native speaker on contemporary topics. Choral recitation, group conversations. Prereq: 342 or 345.

425 Introduction to Descriptive Linguistics (3) Phonetics and phonemics, morphology and syntax. Types of languages, linguistic groups, dialects, and diatopic geography. Application of descriptive linguistics—field linguistics, dialect study, language classification, introduction to trans-regional grammar. Prereq: six hours of upper division English or French; six hours of upper division courses in modern or ancient language (exclusive of German and French 301-302), courses in literature in translation, and general education, 3000 words of writing outside the classroom. (Same as German 425, Russian 425, Spanish 425 and Linguistics 425.)

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

428 Romance Linguistics (3) Development of Classical Latin through Vulgar Latin into Romance languages. (Same as Spanish 428 and Linguistics 428.)

430 Theoretical 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 Gauls to World War II. Historical events, daily life, all forms of arts. Prereq: 212, 218 or equivalent. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

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) The 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 masonic aspects of French occupation, the Voyages of Champlain, the Journals of the Jesuits, as well as the literature of contemporary Quebec. Prereq: 212, 218 or equivalent.

435 Capstone Experience in French (4) Synthesizing senior curriculum and tutor will advise students reflect on the raison d'être of the discipline from a multidimensional point of view. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

491 Foreign Study (1-15)

492 Off-Campus Study (1-15)

493 Independent Study (1-15)

GEOGRAPHY (415)

101-102 World Geography (3,3) Selected topics and world regions, especially those problems or situations of contemporary interest, to illustrate geographical points of view, concepts, and techniques. Must be taken in sequence.

107 Honors: World Geography (3) Designed for freshman and sophomore students of superior ability with particular emphasis on non-quantitative aspects of various world problems and issues. Enrollment limited. Prereq: Open to freshmen with a score of 25 or better on the ACT or a verbal score on the SAT; and to sophomores with a cumulative GPA of 3.2 or higher. Geography 107 may be substituted for Geography 101 in the 101-102 sequence. Students may not receive credit for both Geography 101 and 107.

121-132 Geography of the Natural Environment (4,4) Characteristics and processes of the earth's surface and lower atmosphere; their interaction to produce a world pattern of distinctive environments significant to human settlement and resource utilization. Prerequisites: 101-102, 3 hours lecture and 2 hours lab per week. Open to students who have taken 330. Prereq: 131 is prerequisite to 132.

141 Introduction to Economic Geography (3) Local, regional, and global informational of the world's major types of economies, agriculture, energy and mineral production, manufacturing, transportation, trade, and services.

310 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.

320 Cultural Geography: Core Concepts (3) Background and method of cultural geography; basic concepts and theories focusing on cultural regions, cultural ecology, innovation and diffusion, cultural integration, and world patterns of cultural phenomena.
323 Behavioral Geography (3) Types of human behavior, such as shopping, territoriality, commuting, residential mobility, and regional consciousness as they relate to the geographic environment, and culture. (Same as Urban Studies 323.)

334 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 different adaptive characteristics of regions of the United States and Canada. Writing-emphasis course: at least one in-class exam and 3000 words of writing outside the classroom.

363 Geography of the American South (3) Geographical appraisal of the southeastern United States, including physical environment and human resources. Origin and development of contemporary economic and cultural traits of the area. Writing-emphasis course: at least one in-class exam and 3000 words of writing outside the classroom.

365 Geography of Appalachia (3) Interrelation of physical, economic, and social patterns that give distinctive character to the region and its parts, especially in southwestern Appalachia. Appalachia in perspective in the current American scene. Writing-emphasis course: at least one in-class exam and 3000 words of writing outside the classroom.

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: at least one in-class exam and 3000 words of writing outside the classroom.

373 Geography of South America (3) Physical, cultural, and economic characteristics of the countries of South America with emphasis on the Andes and the Southern Highlands. (Same as Afro-American Studies 373.) Writing-emphasis course: at least one in-class exam and 3000 words of writing outside the classroom.

375 Geography of the Soviet Union (3) Geographical appraisal of the Soviet Union, including physical environment, economic patterns, and human resources. (Same as Russian and East European Studies 375) Writing-emphasis course: at least one in-class exam and 3000 words of writing outside the classroom.

379 Geography of Africa (3) Physical, cultural, and economic characteristics of Africa, with particular emphasis on the area from the Sahara to the South of the Sahara. (Same as Afro-American Studies 379.) Writing-emphasis course: at least one in-class exam and 3000 words of writing outside the classroom.

411 Computer Mapping and Geographic Information Systems (3) Concepts, management, and presentation of data and digital data for spatial analysis, with emphasis on cartographic data structures. 2 hours lecture and 2 hours lab per week. Prereq: 310 and knowledge of a computer language or instructor of consent.

412 Cartography (3) Cartographic techniques applied to the design, compilation, and reproduction of maps and other graphics. 2 hours lecture and 2 hours lab per week. Prereq: 310 or consent of instructor.

413 Remote Sensing: Types and Applications (3) Principles and uses of remote sensing imagery, digital data, and spectral data, with particular emphasis on geographic interpretation and mapping techniques. Prereq: 310 or consent of instructor.

415 Quantitative Methods in Geography (3) Geographical application of statistical techniques, point pattern analysis, and analysis of areal units. Prereq: Mathematics 115 or two semesters of calculus or consent of instructor.

419 Practicum in Cartography/Remote Sensing (2-6) Supervised work in preparation of maps and other graphic materials in the Cartographic Services Laboratory or a similar organization. Prereq: Written consent of department prior to registration. S/N or letter grade.

421 Geography of Folk Societies (3) Geographical study of folk culture, emphasizing traditional material culture and rural settlement, with examples drawn from Eastern North America and selected foreign areas. Prereq: 101-102 or 300 or consent of instructor.

425 Historical Geography of the United States (3) Survey of the changing human geography of the United States during four centuries of settlement and development. Emphasis on changing population patterns, development of agricultural regions, and patterns of urban-industrial development. Prereq: 361 or consent of instructor. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

433 The Land-Surface System (3) Characteristics of landform, water, vegetation, and surface materials, and their regional interrelationships. People as evaluators and agents of change. Prereq: 131-132 or consent of instructor.

434 Climatology (3) General circulation system leading to world patterns of climate. Climatic change and modification, and interrelationships of climate and human activity. Prereq: 131-132 or 330 or consent of instructor.

436 Biogeography (3) Study of the changing distribution patterns of plants and animals on a variety of spatial and temporal scales. The effects of continental drift, Pleistocene climatic change, and human activity on world biota is emphasized. Prereq: 131-132 or 330 or consent of instructor.

438 Water Resources (3) Global water resources and hydrologic processes, including water availability, flooding, and the effects of water from physical and geographic perspectives. Prerequisite: 131-132 or 330 or consent of instructor.

441 Urban Geography (3) Concepts and theories concerning development and significance of systems of cities and internal morphology of cities. Prereq: 101-102 or 141 or 340 or consent of instructor.

445 Geography of Resources (3) Factors related to variations in resource availability from time to time and place to place, with particular emphasis upon energy and metallic resources. Prereq: 101-102 or 141 or 340 or consent of instructor.

449 Geography of Transportation (3) Examination of transportation systems, emphasizing their effects on trade patterns, land location, organization, and development. Prereq: 141 or 340 or consent of instructor.

450 Process Geomorphology (3) (Same as Geology 450.)

491 Foreign Study (1-15) Prereq: Written consent of department required prior to registration. S/N or letter grade.

492 Off-Campus Study (1-15) Prereq: Written consent of department required prior to registration. S/N or letter grade.

493 Independent Study (1-15) Prereq: Written consent of department required prior to registration. S/N or letter grade.

495 Proseminar in Geography (3) Major themes in geography, especially trends over the past 40 years. Required for majors. Open to graduate students. Prereq: Senior standing and completion of at least 12 hours of major or minor requirements in geography. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

497 Geography of Folk Societies (3) Geographical study of folk culture, emphasizing traditional material culture and rural settlement, with examples drawn from Eastern North America and selected foreign areas. Prereq: 101-102 or 300 or consent of instructor.

498 Historical Geography of the United States (3) Survey of the changing human geography of the United States during four centuries of settlement and development. Emphasis on changing population patterns, development of agricultural regions, and patterns of urban-industrial development. Prereq: 361 or consent of instructor. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

GEOL OGY (424)

100 The World's Oceans (3) Geophysical, physical, and biological aspects of oceans and human interactions with the marine environment. 3 lecture hours per week.

101 The Dynamic Earth (4) Physical processes within and upon the Earth's surface leading to the formation of rocks, plate tectonics and earthquakes, and landscapes. Must be taken in sequence. 3 lecture hours and one 2-hour lab or field period.

102 Earth, Life and Time (4) Fossils, evolution and ancient environments, plus a review of 4.5 billion years of earth history. Must be taken in sequence. 3 lecture hours and one 2-hour lab or field period.

103 Environmental Geology (4) Contemporary problems related to the natural environment; topics include: global climate change, pollution, resource depletion. Prereq: 101. Fulfills laboratory science sequence requirement for College of Liberal Arts.

107 Honors: The Dynamic Earth (4) Laboratory work emphasizes understanding physical processes, including the formation of rocks, plate tectonics, earthquakes, volcanoes, and landscapes. 3 lecture hours, 1 2-hour lab, and 2 field trips. Consult current College of Liberal Arts guidelines. Students may not receive credit for both Geology 101 and 107.

108 Honors: Earth, Life and Time (4) Laboratory work emphasizes understanding biological processes, including evolution and ancient environments throughout 4.5 billion years of Earth history. 3 lecture hours, 1 2-hour lab, and 2 field trips. Prereq: Grade of B or better in Geology 107, grade of A in Geology 101, or permission of the instructor. Students may not receive credit for both Geology 102 and 108.

201 Darwin, Dinosaurs, and Extinctions: An Introduction to Evolution (3) Theories and evidences of evolution presented in a modern manner, with emphasis on its relevance to modern society. Topics include origin of life, mass extinctions, evolutionary trends. Opportunity to examine modern species and fossils. May not be applied toward the Biology 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 the Biology major.

203 Geography of National Parks (3) Geologically spectacular landscapes and geologic history of national parks of the world. Hike to attempt 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.

210 Basic Geology for Engineers (2) Materials and structures of the earth. For College of Engineering students only. 2 lecture hours and one 2-hour lab or field period.

310 Mineralogy (4) Introduction of 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. Prereq: Chemistry 120-130 or equivalent. 3 hours lecture and 1 lab.

320 Paleobiology (3) Fossils and their uses in functional morphology, paleoecology, biogeography, biostatigraphy, and evolution. Prereq: 102 or consent of instructor. 2 lecture hours and one 2-hour lab or field period.

325 Geological History of Life 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. Prereq: Elementary biology sequence or consent of instructor. 2 lecture hours and one 2-hour lab or field period.

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

340 Stratigraphy and Sedimentation (3) Stratigraphic principles and practices with sedimentation processes and interrelationships of depositional environments. Prereq: 101, 102 and 310. 2 lecture hours and one 2-hour lab or field work.

345 Geology of East Tennessee (1) Geology of the Southeast and its solutions related to human advancements. Completion of major core courses or consent of instructor. 1 lecture hour plus field trips.

346 Introduction to Oceanography (4) Physical, chemical, biological, and geological processes of the oceans, including tides, waves, standing bodies, basin processes, marine sedimentation, biogeochemical.
cycles, and food webs. Prereq: Chemistry 120-130; recommended: 101-102. 3 lecture hours and one 2-hour lab. (Same as Botany 346.)

370 Structural Geology (4) Common geologic structures (folds, faults, cleavage) and their genesis. Laboratory includes map measurement, cross-sections, projections, stereonets. Prereq: 101-102, Mathematics 141-142. 3 lecture hours and one 2-hour lab.

380 Resources - Minerals and Energy (3) World and United States resources of minerals and energy, price and production trends, future supply of minerals and energy, national mineral and energy policies. Emphasis on appraisal of conventional and alternate energy resources. 3 lecture hours.

410 Advanced Mineralogy (3) Crystal chemistry of the rock-forming minerals. Interaction of electromagnetic radiation and crystalline solids. Optical properties of minerals, visible and infrared spectroscopy, and x-ray diffraction. Laboratory exercises emphasize thin section and x-ray diffraction methods of mineralogy. Prereq: 310. 2 lectures, one 2-hour lab.

420 Paleobotany (4) Principles of ecological analysis as applied to fossils and fossil assemblages with emphasis on decipherment of plants and interpretation. Laboratory is designed around preparation of scientific reports based on field and laboratory analysis. Writing emphasis. course. 3 lecture hours and one 2-hour lab.

421 Invertebrate Paleontology I (3) Preservation processes and geologically important representatives of Protista, Porifera, Cnidaria, Bryozoa, and Brachiopoda. Emphasis is on functional morphology, skeletal structures, ecology, and stratigraphic distribution. Prereq: 300 or consent of instructor. 2 lecture hours and one 2-hour lab.

422 Invertebrate Paleontology II (3) "Higher invertebrates": Annelida and other worms, Mollusca, Arthropoda, Echinodermata, Graptolida, Conodonta, Chordata. Emphasis is on functional morphology, skeletal structures, ecology, and stratigraphic distribution. Prereq: 320 or consent of instructor. 2 lecture hours and one 2-hour lab.

425 Evolution and the Geologic Record (3) Evolution of life viewed from the fossil record. Includes mass extinctions, macroevolution, and evolutionary rates. Prereq: 320. 2 lecture hours and one seminar.

426 Paleobotany and Palynology (3) Evolutionary history of terrestrial plant life through examination of the fossil record of macrobotanical remains, spores, and pollen grains. Origin and diversification of Gymnosperms and Angiosperms; changes in floristic provinces through time. Laboratory experiments emphasize thin section analysis, pollen identification, and data. Emphasis is on functional morphology, skeletal structures, ecology, and stratigraphic distribution. Prereq: 300 or consent of instructor. 2 lecture hours and one 2-hour lab.

440 Field Geology (6) Summer field course for advanced undergraduate geology majors and first-year graduate students. No prerequisites. Taught off-campus at the Geology Field Station and requires the full time of the student. The course provides a synthesis of the major topics in geology in a group-oriented field setting. Field techniques demonstrated and practiced, and applied to the solution of geologic problems. Prereq: Completion of major core courses and consent of instructor.

445 Regional Geology of the United States (3) Evolution of geologic provinces within the United States with emphasis on the integration of several types of geologic data. Prereq: 330, 340, 370. 3 lecture hours.

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

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

460 Principles of Geochmistry (3) Application of chemical principles to geologic problems. Emphasis on crystal chemistry and relation between basic atomic structure and the chemical behavior of elements in the Earth's crust. Prereq: Chemistry 120-130; recommended Geology 330. 2 lecture hours and one 2-hour lab.

470 Applied Geophysics (3) Basic principles and applications of seismic, gravity, magnetic, and electrical prospecting methods. Recommended: Math 141-142 or 147-148 and Physics 131. 2 lecture hours and one 2-hour lab.

480 Principles of Economic Geology (4) Ore-forming processes, classification of mineral deposits, survey of different types of mineral deposits with examples, and metallogeny. Prereq: 310 and 330 or equivalents. Recommended: 460. 3 lecture hours and one 2-hour lab.

485 Principles of Geochemistry (3) Ground water flow, aquifer analysis, ground water contamination, and ground water management. Prereq: 101 or equivalent or consent, Chemistry 120-130 or equivalent, and Mathematics 141-142 or equivalent. (Same as Chemical Engineering 485.)

490 Special Problems in Geology (1-3) Directed study or special problems. Prerequisite: Consent of instructor. May be repeated. Maximum 6 hours.

491 Foreign Study (1-15)

492 Off-Campus Study (1-15)

493 Independent Study (1-15)

GERMAN (433)

101-102 Elementary German (3,3) Must be taken in sequence.

108-208 Honors: Elementary and Intermediate German (8,8) Open to students who qualify for honors. Freshman English. Upperclass students must have a B average to enter. Completion of 108-208 allows the student to enter all 300-level German courses. Prerequisites: C or above must be achieved in 108, 109, or 208. A student obtaining a grade of C or better in 106 may continue with German 102. Enroll limited to 12 students.

111 Language Laboratory (0)

112 Language Laboratory (0)

199 The German Language and World Business (1) The course will examine the use of foreign trade in the United States at the local, state, and national level. An interdisciplinary team of faculty from the College of Business Administration and Liberal Arts will provide an overview of the role of language study and international cultural awareness in world business. Restricted to students majoring in the program in Language and World Business. See the Director for further information.

201-202 Intermediate German (3,3) Must be taken in sequence. Prereq: 102 or equivalent.

301-302 Introduction to German Literature (3,3) Prereq: 202 or equivalent. Need not be taken in sequence.

304 Elementary Dutch (3) Prereq: Reading knowledge of German. Primarily for graduate students in German. No graduate credit for students majoring in German.

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. Prereq: 102 or equivalent. (Same as Cinema Studies 323.)

325 Modern German Novel in English Translation (3) Great twentieth-century German novels, including study of novel theory and criticism. No foreign language credit. Writing emphasis: course. 3 lecture hours.

326 German Drama in English Translation (3) German drama from the Enlightenment to the present, including study of dramatic theory and criticism. No foreign language credit. Writing emphasis: course. At least one in-class essay examination and 3000 words of writing outside of class.

331-332 Elements of German for Upper-Division and Graduate Students (3,3) Elements of language, elementary and advanced readings and a final 10,000 word translation project. Open to graduate students preparing for language examination, and upper-division students desiring reading knowledge of the language. Undergraduate credit only. No credit for students who have completed 101-202 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; no German 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: 311-312 or equivalent. 6 hours of courses excluding 331-332 and courses in English translation, or equivalent.

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

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

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

424 German Literary Movements (3) Major periods in the development of German literature. Major credit, with 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.)

426 Methods of Historical Linguistics (3) Phonetics, distinctive feature analysis, sound change types, nature of sound change, principles of reconstruction and fundamental assumptions about language change through time. Review of historical linguistic change, language families. Proto-indo-European and other languages. Prereq: 6 hours of upper-division foreign language courses excluding courses in translation or graduate reading courses. (Same as Russian 426, French 426, Spanish 426, and Linguistics 426.)

435 Structure of the German Language (3) Contrasts English-German segmental and suprasegmental phonemes, contrastive English-German linguistic structures, selected topics in advanced German grammar and syntactic analysis. Prereq: 6 hours of upper-division German language courses excluding courses in translation and graduate reading courses. (Same as Linguistics 435.)

436 History of the German Language (3) Development of the German language from Indo-European through Proto-Germanic, Old High German, Middle High German and to New High German. Internal and external linguistic history of German speech. Prereq: 6 hours of upper-division German language courses excluding courses in translation and 331 or 332. (Same as Linguistics 436.)

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

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 Director for further information.

GREEK

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.
HEALTH (449)

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

200 Seminar in Human Sexuality (2) Problems and responsibilities of being male and female as they relate to health and wellness. Satisfactory/No Credit only. F

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

230 Cardiopulmonary Resuscitation (2) Theory and skills to implement basic cardiac life support following cardiac arrest due to such conditions as heart attack, drowning, electrocution, 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 care settings; health careers and occupations; health behavior; intervention techniques; health appraisal techniques; health promotion strategies. F

305 The School in Community Health (2) Roles and responsibilities of teachers in school health programs with emphasis upon: health problems of the school child, responsibilities of teachers in school health programs, roles and responsibilities of community resources, and communicating healthful behaviors in the school setting. F, Sp

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

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 can make alcoholism a serious health and work problem. Various types of instructional/educational and intervention programs. F, Sp

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

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

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

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 service delivery systems. Study of health problems/concerns of women and techniques for prevention, maintenance and/or correction. (Same as Women's Studies 425.) E

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

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

470 Special Topics (1-3) For advanced students, teachers, school administrators, nurses and other para-medical personnel. Lectures, demonstrations, films, field trips, and supervised research in special health/wellness or health promotion issues. May be repeated. Maximum 12 hours.

475 Directed Independent Studies (1-3) Individual identification and study of a health/wellness or health promotion problem/issue. Prereq: Consent of instructor. May be repeated. Maximum 12 hours. E

481 Internship I: Grades 7-12 (3-6) Methods and theories of teaching. Prerequisite: completion of the basic education program. Applicants must be at least 18 years old for certification. E

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

483 Field Practice (10) Off-campus health internships or field practice in an educational or other agency with qualified professional. Prerequisite: Consent of instructor. Satisfactory/No Credit only. E

HISTORY (462)

151-152 Development of Western Civilization (3,3) Historical survey of the civilization of the western world. 151-152 Ancient world to 1715. 152-1715 to present. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

157-158 Honors: Development of Western Civilization (3,3) Consent of department required. Prerequisites: 157-F, 158-Sp Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

161-162 A History of World Civilization (3,3) Historical survey of world civilization. 161-Origin of human societies to 1500. 162-1500 to present. Prerequisites: 161-F, 162-Sp Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

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

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

330-331 History of England (3,3) See course listings for times and days, and prerequisites.
332-333 History of France (3,3) 332-The emergence of modern France from the Renaissance to 1789. 333-334 History of France since the Revolution, 1789 to present.

334-335 History of Germany (3,3) 334-Germany I, to 1815. The first Reich's Fortune and Failure. The development of the Reich in the wake of World War I and its disintegration, through dynastic and religious alignments, to the Austrian-Prussian dualism in the time of Bismarck and Maria Theresa, culminating in the unification of the German Empire in 1871 under Bismarck's leadership.

335-336 History of Austria and Central Europe: Frontier and Civilization Center (3) Austria's development, from the Hapsburg dynasty to the expansion of the Austrian Empire to the crossroads of Europe. Major themes include the balance of power politics, relationships with neighboring peoples, cultural achievements, economic integration and disintegration, and the problems of centralization versus national diversity.

340-341 History of Russia (3,3) 340-To the middle of the 19th century. 341-From the middle of the 19th century. (Same as Russian and East European Studies 340-341)

350-351 Early Modern America, 1607-1815 (3,3) A thematic approach to early American history in the formative years, 350-1776; 351-1776 to 1815.

352 The United States during the Jacksonian Era, 1815-1860 (3) An examination of the major economic and political developments in antebellum America within the framework of the struggle between nationalism and sectionalism.

353 The Civil War and Reconstruction Eras, 1860-1877 (3) An examination of the major political, economic, and social developments in the United States during the Civil War and Reconstruction eras.

354 United States, 1877-1933 (3) America's political, economic, and social development from the Gilded Age through the Great Depression.

355 United States, 1933 to the Present (3) American experience from Roosevelt's New Deal through World War II and the Cold War. Domestic history but includes military and foreign policy.

360-361 History of Latin America (3,3) 360-Colonialism and Independence, 1500-1825. 361-National Development, 1825 to present. (Same as Latin American Studies 360-361)

362-363 History of East Asia (3,3) 362-East Asia: History and Culture to 1600. Chiefly China and Japan; Korea and Vietnam included. Confucianism, Buddhism, social structure, political tradition, and Japanese feudalism. Comparison and contrast with Western history and culture. Major works from the 16th century. China, Japan, Korea and Vietnam. Comparative modernization; Western impact, cultural transformation, communist movement, and post-war economic success. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

364 History of China (3) Changes and continuities of the world's longest uninterrupted civilization with a question of the historical and cultural differences between Chinese and Western civilizations; Chinese revolutions in historical context.

365 History of Japan (3) Japanese history from mythological origins through the Meiji Restoration, with emphasis on the political and social development of the country, the influence of disease on society, Japanese feudalism, popular culture in the 1700s, the Meiji Restoration, and Japanese militarism.

366 Ancient Near Eastern Civilization (3) Bronze and Iron Ages. Origin of civilization; institutional structures; interpretation of current events from a historical perspective.

369-370 History of the Middle East (3,3) 369-Rise and 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.

371-372 African History (3,3) 371-Ethnic groups of the continent and regions of sub-Saharan Africa and the conflict and change occurring there from 1000 A.D. through the World War I era in 1918. 372-Dynamics of African independence since 1919. Achievement of independence by some of the African nations and the failure of Africans in the south to achieve that goal. Issues of urbanization, industrialization, and formation of a national identity within the twentieth-century African context. (Same as Afro-American Studies 371-372)

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 Third 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 views, and attempts by African and Latin American countries to maintain their individual identity in circumstances of cultural disruption. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

375 Revolutions in Historical Perspective (3) Comparative history of major revolutions which transformed political, social, and economic structures and values, such as those in France, Russia, China, Mexico, and Iran. Contrasts and comparisons in causes, effects, and outcomes. Relations between leaders and masses. Major theories of revolution. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

376 History Behind the News (3) Contemporary analysis and the historical background of selected newsworthy events in North and South America, Europe, and the non-Western world. May satisfy history major requirements except those of geographical distribution. May be repeated by non-majors. Maximum 6 hours.

379 American Issues: Individualism and Community (3) Ways in which Americans have organized their lives so as to retain the benefits of individual and small group interaction while pursuing the purposes that come from larger shared values and goals. Topics include conflicting and competing tendencies toward individualism and "group" and "collective" identity. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

380 American Issues: War and the Peaceful Ideal (3) The evolution of American foreign policy to express abhorrence to war and imperial conquests and, to engage in war and exercise economic or political dominance over other peoples. Topics include relationship between leaders and followers, patterns and dissent, mobilization for war, and post-war attitudes. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

407-408 Honors: Senior Paper (3,3) 407-Supervised reading, bibliographical search, conceptual clarification, and written analysis of an Honors paper. Both are required of students working for honors in history.

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

431-432 European Intellectual and Cultural History (3,3) 431-432-Western Europe, 1500-1700. 431-Romanticism to Relativism, 1750-Preseon.

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

433 War and Society in Europe from Medieval to Modern Times (3) Relationship between the nature of war and society in Europe from the Middle Ages to the modern era, with emphasis on the wars of the 20th century.

440 America: The Society and its Social Record (3) Chronological survey of major currents in American social thought and the social consequences of those as the intellectual mythology which informed those directions. Emphasis is on changing nature, status, and consequences of social reform. (Same as American Studies 440.)

441 The American Frontier and Westward 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) Development of two cultures, one in the backwoods of America and one in Europe, and the interaction between the two.

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

445 The Afro-American Experience from the Colonial Period to the Present (3) Topics in 19th and 20th century Afro-American history, such as Pan-Africanism and the effect of education on the status of Blacks. (Same as Afro-American Studies 445.)

446 History of American Culture (3) Topic examination of American political, economic, and social values, attitudes and beliefs from the formation of the nation to the present. Illustrative topics: creation of a national culture; Civil War as cultural conflict; challenge of modernism: rural versus urban values; cultural upheaval 1920's-30's; present nature of American culture. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

452 The American Experience in World War II (3) Diplomatic origins and development of America's cultural, social, and economic impact on the world. War aims and current events in relation to the war. Writing-emphasis course:

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.)

455 Local and Regional History (3) History of the region as a field of study. The concept of regionalism and the study of regional models. (Same as American Studies 455.)

456 History of Sports in the United States (3) Development of sports and their significance in American life from colonial period to present. Emphasis on social, cultural, economic and political impact of both spectator and participatory sports in 20th century. (Same as American Studies 456.)

459 Introduction to Quantitative Methods for Historians (3) Course to teach computer and machine-readable data with SAS (Statistical Analysis System). Uses practical historical problems in urban and rural perspectives.

470 Studies in British History (3) Variable content. Selection of themes and issues in British history. May be repeated. Maximum 9 hours.
HOME ECONOMICS EDUCATION (490)

210 Field Experience in Teaching Home Economics Education (1-3) May be repeated. Maximum 3 hours. Satisfactory/No Credit only. F, Sp

220 Introduction to Home Economics Educational Programs (3) School-based and community-based home economics programs. Field experience included. F, Sp

320 Strategies of Teaching Home Economics (3) Teaching methods, techniques, use of media. Field experience included. Prereq: 220. F

420 Curriculum Development in Vocational Home Economics (3) Program planning, evaluation, design of instruction for classroom. Prereq: 320, Admission to Teacher Education Program. To be scheduled immediately preceding student teaching. Includes laboratory. F, Sp

421 Teaching Occupational Home Economics (1) Methods, organization, curriculum for Home Economics Related Occupational programs. Prereq. or Coreq: 420. Sp

430 Student Teaching in Vocational Home Economics (6-15) Prereq: 420. Satisfactory/No Credit only. F, Sp

440 Teaching in Community-Based Programs (3) Planning and implementing non-formal instructional programs; methods of teaching, delivery systems, evaluation. Includes field experience. Prereq: 320. (Same as CFS 440.) Sp

445 Field Experience in Community-Based Programs (1-15) Placement in Home Economics-related programs or businesses. Includes seminar. May be repeated. Maximum 15 hours. Satisfactory/No Credit only. F, Sp, Su

497 Honors: Home Economics Education (3-6) Issues or topics affecting home economics education, designed to meet particular interests of the student. Prereq. or Coreq: Consent of the instructor. May be repeated. Maximum 6 hours. F, Sp, Su

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 industry. F, Sp

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

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

230 Quantity Food Procurement, Production and Service (3) Principles for determining needs, procuring, storing, preparing and serving foods in volume. Prereq: 120, 220, NTR 100 or 107, NTR 101, Micro 210 or PH 310; progression into HRA program or consent of the instructor. Coreq: 321 or 322. F, Sp

231 Quantity Food Procurement, Production and Service Laboratory (1) Application of principles in determining needs, procuring, storing, preparing and serving foods in volume. Prereq: 120, 220, NTR 100 or 107, NTR 101, Micro 210 or PH 310; progression into HRA program or consent of the instructor. Coreq: 320. F, Sp

232 Quantity Food Procurement, Production and Service Observation (1) Application of principles in determining needs, procuring, storing, preparing and serving foods in volume. F, Sp

234 Tourism and Travel Administration (3) Economic and social forces influencing domestic and international tourism; services, functions of retail, wholesale travel agencies. Prereq: 120; progression into HRA program or consent of the instructor. F, Sp

236 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. F, Sp

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

421 Foodservice Systems Design and Equipment (3) Physical facility design, production, delivery system analysis, equipment. Prereq: 320, 321 or 322; Accounting 202; Economics 201; Marketing 301; Business Law 301; 100 hours of verifiable work experience. Satisfactory/No Credit only. F, Sp, Su

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; Accounting 202; or consent of instructor. F, Sp

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

424 Advanced Hotel and Restaurant Administration (3) Integration of functional areas. Management level administrative processes and decision making concerning 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. F, Sp

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

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

440 Special Topics in Home and Restaurant Administration (3) May be repeated. Prereq: Junior or Senior standing in Hotel and Restaurant Administration; topics variable. F, Sp

497 Honors: Hotel and Restaurant Administration (1-3) Individual student; faculty experience. Prereq. Junior and Senior, Standing, consent of the instructor. Satisfactory/No Credit only. E

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.

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; spreadsheets, word processing, and database. Prereq: Declared major in College of Human Ecology. F, Sp

480 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. E

HUMAN PERFORMANCE AND SPORT STUDIES (526)

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.

102 PE Major: Basketball (1) Fundamentals of basketball, including individual and team skills with consideration of techniques for effective teaching of these fundamentals.

103 PE Major: Tennis (1) Development of skills, rules and game strategies in tennis applying skill analysis and various styles of teaching.

104 PE Education Major: Gymnastics I (1) Beginning skills in tumbling and on selected men's and women's gymnastics apparatus. Tumbling skills include forward, backward, and balance skills. Apparatus include vaulting, balance beam, and pommel horse. Special emphasis on teaching techniques, safety, progression, and spotting.

105 PE Major: Folk and Square Dance (1) Basic folk and square dance steps, patterns and designs with emphasis on skill development, terminology, etiquette and basic choreography.

106 PE Major: Track and Field (1) Basic skills of track and field with consideration of techniques for effective teaching.

260 Practicum I (1-3) First practicum experiences to support and clarify career goals. May be repeated. Prereq: Consent of instructor. E

271 PE Major: Soccer/Softball (1) Fundamentals, including individual and team skills with consideration of techniques for effective teaching.
272 PE Major: Volleyball (1) Elementary and intermediate volleyball skills and techniques; physical education content and strategy related to the game of volleyball with particular emphasis on teaching techniques and skill development.

273 PE Major: Golf (1) Fundamental skills, general rules, and strategies related to the game of golf with emphasis on skill development and teaching techniques.

274 PE Major: Gymnastics I (1) Beginning skills in tumbling and on selected men's and women's gymnastics apparatus. Tumbling skills will include twisting skills, kips, and combinations of previous skills. Apparatus will include uneven bars, horizontal bar, parallel bars, and still rings.

275 PE Major: Ballroom Dance (1) Basic ballroom dance patterns and designs, terminology and etiquette with application to the various techniques of teaching.

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 PE 276.)

291 Field Studies I (2) For all university undergraduates on the study of sport in American society from a sociological perspective. (Same as Sociology 291.)

292 Field Studies II (2) Peer teaching, using selected styles, and systematized observation of motor behaviors of physical education students in elementary, middle, and high school settings. Prereq: 100.

311 Coaching Football (1) Theoretical and practical application of various coaching techniques in football for the prospective secondary college coach. Includes analysis and selection of appropriate game plans, specific conditioning and training programs, practice organization, player evaluation, scouting, individual and team offensive and defensive strategies, and development of an assistant coach.

312 Coaching of Basketball (1) Individual and team fundamentals for the high school coach; conditioning, schedule making, and other business arrangements. Prereq: Consent of instructor.

313 Coaching of Track and Field (1) Coaching methods and training techniques for various track and field events, including experience observing and working at meets and practices. Prereq: Consent of instructor.

314 Coaching of Gymnastics (1) Fundamentals used in the coaching and judging of competitive men's and women's gymnastics. Emphasis on the safety and spotting of competitive gymnastics skills. Prereq: Consent 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, player evaluation, scouting, individual and team offensive and defensive strategies. Prereq: Consent of instructor.

321 World History of Sport and Physical Education (3) Historical survey of the development of sport and physical education from ancient primitive to twentieth century civilization. Prereq: Progression to the major or consent of instructor.

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

325 Athletic Training Techniques (2) Prevention of athletic injuries through sound conditioning programs and practices; recognition and immediate treatment of injuries. Prereq: Progression to the major or consent of instructor.

326 Practicum in Preschool Aquatics (2) Individualized planning and teaching of aquatic experiences to 3 to 5-year-old children in the context of a broad-based motor development program.

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

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

350 Motor Development (3) Evolution of human motor behavior within the context of structural/functional changes, and with the respect to psychological, sociological, and social-psychological factors related to and/or affecting motor performance/learning; analysis of changes in motor performance and underlying attributes across the lifespan with emphasis upon critical developmental periods. Prereq: Progression to major or consent of instructor.

372 Philosophy of Sport and Physical Education (3) Theories of reality and value as they apply to sport with emphasis on ethical issues. Prereq: Progression to major or consent of instructor.

380 Special Topics (1-3) Study in selected disciplinary and interdisciplinary areas of sport, physical activity, and the humanities. May be repeated. Prereq: Progression to the major.

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.

405 Sociology of Sport (3) Social meaning, organization and process of sport. Difference between sport and play and games, social stratification and sport, sport as an occupation, place of sport in mass culture, sport sub-cultures, and reciprocal influences of sport and cultural milieu. Prereq: Sociology 295 or permission of instructor. (Same as Sociology 405.)

409 Measurement and Evaluation of Physical Education (2) Relationship of measurement and evaluation in Physical Education. Critique, selection, and administration of appropriate affective, sport skill, and knowledge assessment instruments for children through adult age group. Prereq. Junior standing and admission to Teacher Education Program or progression to the major.

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.

411 Adapted Physical Education (3) Developmental disabilities, other physical handicaps, and variant/invariant characteristics of specific syndromes germane to motor development/programming for those with special education needs.

412 Practicum in Adapted Physical Education (1) Teaching those with special education needs. Observation and assistance to physical education teachers who teach in schools for the handicapped and/or in which many handicapped individuals are mainstreamed. Prereq: Progression to the major. Coreq: 411.

413 Special Practicum in Adapted Physical Education (1) Two sections including an on-campus lab program with one-one-one with a 2-5 year-old child who is a handicap involving an experience relevant to student needs with a physical education teacher, physical or occupational therapist, at a school for the handicapped. May be repeated. Maximum 3 hours.

414 Physical Testing and Exercise Prescription (3) Relationship of exercise to cardiorespiratory function, body composition, strength and flexibility. Measurement and evaluation of fitness in normal populations. (Same as Health 414.)

416 Athletic Coaching Field Experience (1) Practical experience in coaching and related responsibilities. May be repeated. Maximum 2 hours. Prereq: Approval of instructor.

420 Methods in Physical Education (3) Application of theory and styles of teaching to teaching/learning environments including planning, presenting, and evaluating lessons concerning knowledge, strategies, and skills for physical activity, game teaching, macro teaching and field experiences. Prereq: Minimum 6 credits in Physical Education Major activity course. Prereq: Admission to Teacher Education Program. Coreq: 450.


422 Applied Kinesiology (3) Study and emphasis of human movement with emphasis on biomechanical principles and their application to movement and neuromuscular fitness. Prereq: Consent of instructor.

423 Readings in Physical Education (2) Current and classic literature in physical education.

424 Program Planning in Physical Education (2) Curriculum theory, principles, practices and issues specific to physical education with opportunities to develop and evaluate K-12 physical education programs. Prereq: Admission to Teacher Education Program.

425 Administration and Evaluation in Physical Activity and Sport (3) Fundamental principles of organization, administration, and evaluation in the areas of physical activity and sport. Prereq: Admission to Teacher Education Program. Coreq: 450 for teacher education students.

426 Practicum II (1-3) Supervised experience in sport management or exercise/fitness areas. May be repeated. Maximum 10 hours. Prereq: Progression to the major, and consent of instructor.

435 Approaches to Physical Education for Children (3) Contemporary approaches with emphasis upon movement education. Prereq: Admission to Teacher Education Program.

442 Administration of Physical Education and Athletics (2) Topics in organizational concepts and management strategies as related to physical education programs and athletics in the public schools. Prereq: Admission to Teacher Education Program. Coreq: 450 for teacher education students.

445 Motor Development Laboratory (3) Application of selected perceptual-motor development, movement education, and pedagogical concepts to performance assessment and motor task/lesson design and presentation to normally developing preschool or primary grade children. Participation in intra- or inter-disciplinary research projects. Prereq: Progression to major or consent of instructor.

450 Physiology of Exercise (3) Lecture and lab 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 445; lectures and 1 lab. (Same as Zoology 490.)

461 Internship I: Grades K-12 (3-6) Methods 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 admission to Teacher Education Program. Satisfactory/No Credit only. F

462 Internship II: Grades K-12 (3-6) Demonstration of professional competencies 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 Management or Fitness Internship (12-15) Full-time practice in approved business/agency. Prereq: Completion of practicum hours and progression to the major; additional prereq: Exercise Physiology/Fitness Option 322, 414, 415.

493 Directed Independent Studies (1-3) Independent study in a specialized area with physical education. May
be repeated. Maximum 6 hours. PreReq: Consent of advisor and permission to the major. Satisfactory/No Credit or letter grade.

**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 toward human beings—those providing services as well as those receiving service. PreReq: Progression to the major. F

320 Peoples and Problems of Appalachia (3) Exploration of life style and institutions from contemporary human services' point of view. Special emphasis placed on political and economic structures of region.

330 Thinking About People (3) Development of thoughtful, informed and critical thinking. Toward human services philosophies—those providing services as well as those receiving service. PreReq: Progression to the major. F

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

390 Information Interpretation and Assessment (3) Information gathering and assessment for human services are examined in detail 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 realistic therapy, family systems, client-centered and rational emotive therapy. Discussion and role playing of methods and skills that will be used during the field experience. PreReq: Progression to the major, 330, Coreq: 440, F

430 Working Within The System (3) Capstone Experience. Context within which the need for human services arises and analysis of the process through which human services occurs. PreReq: Progression to the major, 330, senior standing or consent of instructor. SP

Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

440 Human Services Field Work (5) 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.

441 Human Services Field Work II (5) 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 art therapy, legal and ethical issues, and self-awareness education. May be repeated. Maximum 9 hours.

491 Foreign Study (1-15) May be repeated. Maximum credit 6 hours.

492 Off-Campus Study (1-15) Acceptable for credit in any cultural studies concentration or minor except Afro-American studies. Registration by consent of director of cultural studies and the respective chairperson.

493 Independent Study (1-15) Acceptable for credit in any cultural studies concentration or minor except Afro-American studies. Registration by consent of director of cultural studies and the respective chairperson.

452 Off-Campus Study (1-15) Acceptable for credit in any cultural studies concentration or minor except Afro-American studies. Registration by consent of director of cultural studies and the respective chairperson.

491 Foreign Study (1-15) Acceptable for credit in any cultural studies concentration or minor except Afro-American studies. Registration by consent of director of cultural studies and the respective chairperson.

**INTERIOR DESIGN (582)**

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

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

200 Human-Environment Systems (3) Role of culture in defining environment; physical, social and conceptual structures; interaction of person with environment; role of values and beliefs on design. PreReq: 350, Coreq: 280, 310. Satisfactory/No Credit only. SP


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, 330. SP

270 History of Interior Architecture (4) Historical developments in interior architecture, decoration and decorative arts within cultural context, ancient through eighteenth century. Emphasis on Italy, France and England. PreReq: one semester Art History, SP

280 Micro-Computers for Interior Design (3) Introduction to the computer-aided design process, from basic computer applications through the selection of software, cost estimating, construction drawings related to space planning. One hour lecture and two hour studio. PreReq: 280. Coreq: 350. SP

290 History of American Interior Architecture (3) Historical developments in interior architecture and decorative arts within cultural context, classic to modern, nineteenth to twentieth centuries. Emphasis on functional and symbolic aspects of interior space. PreReq: 280. SP

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

420 Practicum in Human Services (12) Supervised experience in a professional design firm; business practices, project management and design philosophy. PreReq: 380 and consent of instructor. Coreq: Fourth year standing in Interior Design. SP

430 Computer-Aided Design (3) Interaction between computer-aided design process, data-base, spreadsheet software, and personal computers; traditional design and planning related to space planning. One hour lecture and two hour studio. PreReq: 280. Coreq: 350. SP

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 the instructor. F

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. SP

451 History of Interior Architecture (3) Historical developments in interior architecture and decorative arts within cultural context, classic to modern, nineteenth to twentieth centuries. Emphasis on the use of color. PreReq: 350, Coreq: 355, SP

475 History of American Interior Architecture (3) Historical developments in interior architecture and decorative arts within cultural context, classic to modern, nineteenth to twentieth centuries. Emphasis on the use of color. PreReq: 370 or consent of instructor. SP

480 Furniture Design (4) Human factors data applied to design of body support, task support, storage and systems for information transfer; design and development of ad- vanced millwork design; materials and manufacturing processes. One hour lecture and two hour studio. Coreq: fourth year standing in interior design program or consent of instructor. SP

485 Interior Design Synthesis (4-8) Advanced integrative design/research experience. PreReq: 450 or consent of instructor. F

491 International Study (1-15) Individual or group study and/or study abroad; academic research, field work; internship, or studio experience. Approved for 420 in student's professional curriculum. Determination of credit based on particular international experience. PreReq: Consent of instructor. SP

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.

**ITALIAN (584)**

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

211-212 Intermediate Italian (3,3) Sequence stresses reading, writing, listening and speaking Italian to prepare for upper division courses in the language. Must be taken in sequence. Language Laboratory required.
311-312 History of Italian Literature (3,3) Chronological view of Italian literature, the specific historical developments that have influenced it. Prereq: 212 or equivalent.

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

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

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

403-404 Literature of the Rinascimento(3,3) From Pucci 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)

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 Italian and adapted into film. Objectives of the course are to investigate the relationship between literature and cinema and to achieve a greater understanding of Italian culture since 1930. Films will be shown in Italian with English subtitles. May be repeated. Maximum of 6 hours. (Same as Cinema Studies 421.)

491 Foreign Study (1-15)

JOURNALISM (594)

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

203 Editing (3) Methods and practice in judging news, other supervised practice in journalism and public relations projects. Practice in management and production, and the outlook for new technologies. Prereq: 6 hours math and/or accounting, and senior standing. Sp

204 International Communications (3) Development and operation of world mass communications channels and agencies. Comparative analysis of media, media practices, flow of news throughout the world. Prereq: 212 or consent of instructor. (Same as Communication 504.)

205 Communications Graphics (3) Principles and practice in the design aspect of communications. Emphasis on graphic design, typography, illustration and photography, printing and production techniques and publication design. Lecture and laboratory. Prereq: 201 or Communication 504. E

403 International Communications (3) Development and operation of world mass communications channels and agencies. Comparative analysis of media, media practices, flow of news throughout the world. Prereq: 212 or consent of instructor. (Same as Communication 504.)

LATIN

111-112 Beginning Latin (3,3) Must be taken in sequence.

251 Intermediate Latin: Grammar Review and Readings (3) Prereq: 112 or equivalent.

252 Intermediate Latin: Vergili's Aeneid (3) Prereq: 251 or equivalent.

352 Roman Lyric Poetry (3) Poetry of Catullus, Horace, and the elegists. Prereq: 252 or equivalent.

414 Cicero and Techniques of Latin Prose Composition (3) For advanced students in Latin. Practice in prose composition, the writings of Cicero the model. Prereq: 351-352 or consent of instructor.

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) Societies of Latin America with special emphasis on dominant culture patterns, social changes, and impact of nationalism. 251-Pre-Colonial and Colonial periods through Independence era. 252-Latter 19th century and the Modern period. Writing emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom. E

311 Aspects of Luso Brazilian Literature (3) (Same as Portuguese 311)

312 Aspects of Spanish American Literature (3) (Same as Spanish 312)

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.

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)

371 Geography of Middle America (3) (Same as Geography 371)

372 Geography of South America (3) (Same as Geography 372)

411 Cultural Plurality and Institutional Changes in Latin America (3) Value systems, behavioral patterns, political parties, role of the military, the Church, educational institutions, dictatorship and nationalism. Writing emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom. Prereq: 6 hours of Latin American Studies courses or consent of instructor.

421 Latin American Studies Seminar (3) Selected topics in Latin American studies. May be repeated. Maximum 6 hours. Prereq: 6 hours of 300 or 400 level Latin American Studies courses or consent of instructor.

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)

450 20th Century Hispanic Theater (3) (Same as Spanish 450)

455 Latin American Government and Politics II (3) (Same as Political Science 455)

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

472 Masterpieces of Spanish American Literature (3) (Same as Spanish 472)

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)

LIBRARY AND INFORMATION SCIENCE (620)

310 Finding Information: Resources and Strategies (3) Information as a critical resource for research and decision making, emphasis on planning and executing information searches and using library resources. 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 encouraging reading. Undergraduate Credit only. E

340 Books and Related Materials for Young People (3) Materials for teenagers in leisure time or classroom activities; criteria for selecting books, magazines, re-
429 Romance Linguistics (3) (Same as French 429)
chronic theory. Prereq: 6 hours of courses required for
420 The Development of Historical Linguistics as a
ogy 411.)
tation to linguistics with focus on language development
and distribution as a vital part of the nation's eco-
430 History of the Book (3) History of writing and
other devices for encouraging reading. Undergraduate
credit only. Sp
430 History of the Book (3) History of writing and
various methods of bookmarking from earliest times through
the 19th century. Sp
475 Utilization of Instructional Media (3) Same as
Educational Curriculum and Instruction 475. E
Linguistics (623)
200 Language, Linguistics and Society (3) Introduc-
tion 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 371.1)
372 The Structure of Modern English (3) (Same as English 372.1)
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 understand-
ing of language change. Emergence of the Neogram-
marian paradigm from 19th century intellectual trends.
Impact of synchronic and diachronic, structural and
transformational-generative theories on contemporary
linguistics. Prereq: 412.6 hours of courses required for
Linguistics concentration or consent of instructor.
425 Introduction to Descriptive Linguistics (3) (Same as French 425, German 426, 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 Synchonistic Linguistics as a
Science (3) Development of the first synchronic para-
digm of linguistics. Impact of social sciences on the
American descriptivists. Prag School. Transforma-
tional-generative theory. Prereq: 6 hours of courses required for
Linguistics concentration or 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 Lan-
guage I (3) (Same as English 474.)
475 Teaching English as a Second or Foreign Lan-
guage II (3) (Same as English 475.)
485 Special Topics in Language (3) (Same as English
485.)
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 man-
agement 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 part of the nation's eco-
omic and social structure; U.S. transportation system;
society's demands for mobility and policies of public
and private sectors to meet those demands. Prereq: Econ-
omics 201.
400 Special Topic in Logistics and Transportation (3) Seminar in current problem area in logistics and
transportation. Topic announced prior to offering. May
be repeated. Maximum 6 hours credit. Prereq: Consent of instruc-
tor.
401 Materials and Traffic Management (3) Planning
and management of logistics activities including pur-
chasing, transportation, storage and control, and
related management activities. Materials management tools and organiza-
tional structures for various industries. Prereq: 301-302.
402 Transportation Operations and Cost Manage-
ment (3) Freight carrier operations with the develop-
ment of operating costs and their control considered by
each mode individually and in coordination with each
other. Prereq: 301-302.
441 Global Logistics and Transportation (3) Multipla-
tional logistics strategy, import-export process, global
sea, surface and air operations. Comparative transport sys-
450 Computer Information Systems Analysis and Design (3) Design of operational/logistical information
systems for organizations based on evolving microcom-
puter hardware networks, database design theory, pro-
cedural and standard query language software. Analy-
sis of both operational and decision support require-
ments. 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 Transporta-
tion 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)
301 Principles of General and Operations Manage-
ment (3) Basic functions of general management and
the concepts and techniques used in operations man-
agement. Includes lectures and discussion/problem
solving sessions. Prereq: Statistics 201.
303 Management Information Systems (3) Manage-
ment information concepts: Organizational information
needs, management decisions relating to technology
and systems design. Data base management systems
and applications development software. Prereq: Com-
puter Science 102.
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) Be-
havioral processes in organizations; motivation, leader-
ship, decision making, communication; behavioral con-
sequences; group behavior, informal organizations;
organizational structures, conflict, politics, change and
development. Prereq: 301.
341 Operations Management I (3) Design of opera-
tions systems. Process and methods analysis and meas-
urement, location and layout, project management, op-
erational control. Prereq: 301, Statistics 201.
401 Business Strategy/Policy (3) Strategic planning and policy
which affect the character and success of the total
enterprise. Corporate strategy which will enable the
organization to reach objectives. Major writing require-
ment. Prereq: Completion of business core courses and senior standing. Must
be admitted to a business major. Prereq: 301.
421 Business Strategy Formulation and Implemen-
tation (3) General business simulation used by teams
which formulate and implement business strategy.
Application of strategic planning and group management
skills. Prereq: 311, 321, 341.
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, im-
plementing and evaluating various personnel programs.
Prereq: 431, senior standing.
440 Organizational Psychology (3) (Same as Psy-
choogy 440.)
441 Operations Management II (3) Planning and con-
trol of production systems. Aggregate planning, sched-
471 International Management (3) Factors significant
to the manager in international business activities.
Prereq: 301.
493 Independent Study (3) Readings, research, and
special projects. Prereq: Consent of instructor. May
be repeated one time for credit.
MANAGEMENT SCIENCE (627)
310 Management Science and Managerial Decision
Support Systems (3) Introduction to quantita-
tive decision models and their integration into microcom-
puter-based decision support systems. Topics include linear,
dynamic, stochastic and network programs as well as decision
analysis, Markov, inventory and queuing models. Prereq:
Mathematics 121, 122 and Statistics 201.
MARKETING (632)
301 Marketing Management (3) Institutions compris-
ing the marketing system; principal environmental op-
portunities and constraints facing the marketing man-
ager. Prereq: Accounting 201-202; Economics 201, and
Statistics 201.
310 Buyer Behavior - Analysis for Marketing (3)
Comprehensive framework of consumer behavior con-
cepts and processes. Application to market analysis,
design and control of marketing programs. Prereq: 301.
320 Marketing Research and Information Planning (3)
Marketing Research process from its inception to
implementation of the study's results. Student should be
able to critically evaluate the merit of a research project
as well as possess the ability to design a sound market-
ning project. Major writing requirement. Prereq: 301 and
Statistics 201.
320 Promotion Management (3) Principles and prac-
tices of promotion management and their relationship to
overall marketing program. Managerial focus empha-
sizing types of decisions continually confronting promo-
tion executives. Prereq: 301.
430 Marketing Analysis and Strategy (3) Approaches
for finding markets and evaluating them for opportunity. Concepts, types of information and analysis techniques
combined into a framework for strategic decisions. Ma-
ter writing requirement. Prereq: 310 and 320.
493 Independent Study (1-6) Directed research on
subjects of mutual interest to student and staff member.
May be repeated. Maximum six credit hours. Prereq:
Consent of instructor.
497-498 Honors I & II (3.3) Topics may include non-
business marketing applications, macroeconomic issues, market segmentation, international marketing,
services marketing, marketing channels and related
issues. Prereq: Consent of instructor.
MATHEMATICS (641)
100 Intermediate Algebra (3) First degree equations and
inequalities, polynomials, rational expressions, ex-
ponents, graphing, second degree equations and in-
equalities, systems of equations, introduction to expen-
tial and logarithmic functions. The course is de-
signed for students preparing for entrance to Mathemat-
ics 110, 115, 119, 130, 201, and 202. Course does not
satisfy graduation requirements. A, B, C, NC grading.
110 Algebraic Reasoning (3) A course in the applica-
tions of elementary mathematics to life in the modern
world. Includes applications of statistics, consumer mathematics, consumer sciences, and other areas. Students pre-
taking to take 121 should take 110 instead of 110.
Prefer to two years of algebra and one year of geometry in high school and either satisfactory placement test scores or Math 100. This course should not be taken to remove an entrance requirement.

115 Statistical Reasoning (3) An introduction to probability and statistics without calculus. Not available for credit to students in the College of Business Administration. Prefer: Two years of algebra and one year of geometry or either satisfactory placement test scores or Math 100.

119 Precalculus A (3) A review of algebraic functions, equations, and inequalities for students who satisfy the course prerequisites for 121 but whose placement test scores indicate additional preparation is necessary. Students who have received credit for Math 141 or 151 with a grade of C or better may subsequently receive credit for 121. Prefer: Two years of algebra and one year of geometry or either satisfactory placement test scores or Math 119 or 130.

122 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. Prefer: 121, or 141, or 151.

130 Precalculus I (4) Review of algebraic, logarithmic, and exponential functions for students who satisfy the course prerequisites for 141 or 151, but whose placement test scores indicate additional preparation is necessary. Students who have earned a grade of C or better in 141 or 151 may not subsequently receive credit for 130. Prefer: Two years of algebra, a year of geometry, and half a year of trigonometry in high school. Students who do not study trigonometry in high school may take the noncredit course in trigonometry simultaneously.

141-142 Calculus I, II (4,4) First year course in single variable calculus, especially for students of science, engineering, mathematics, or computer science. Credit will not be given for both 141 and 151.

171-172 Calculus III, IV (4,4) Second year course in multivariable calculus. Credit will not be given for both 171 and 172.

179 Mathematics/Courses of Instruction
MEDICAL TECHNOLOGY (669)

410-411 Microbiology (4, 4) Laboratory work in bacte-riology, mycology, and virology. Emphasis on physiology and morphology of bacteria and fungi, their roles, methods of identification, and classification of microorganisms. Coreq: 320. F

420-421 Clinical Chemistry (5, 5) Clinical aspects of biochemistry, including overview of principles and instrumentation with emphasis on practical laboratory application of analytical procedures, specimen collection and handling, significance of results, and quality assurance. Includes blood gas analysis, including radi oimmunoassay; and analysis of blood and other body fluids for enzymes, hormones, and other constituents of clinical interest, utilizing both automated and manual techniques, with emphasis on safety and use of short half-life radioactive materials for in vivo procedures such as radioimmunoassay which utilize radioisotopes.

430-431 Hematology and Clinical Microscopy (4, 4) Principles, techniques, and instrumentation related to qualitative and quantitative evaluation of cellular elements of blood and other body fluids; factors of hemostasis, quantitative chemical analysis of urine, and renal function studies. Emphasis on microscopic identification of cells and the significance and correlation of laboratory data.


MEDIEVAL STUDIES (674)

201-202 Medieval Civilization (3, 3) Introduction to basic themes in the medieval experience, approached from an interdisciplinary point of view and including philoso phy and religion, art and architecture, language and literature, social and political history. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

261 Medieval Culture: Readings from the Early Middle Ages, 500-1000 (3) Critical analysis and interpretation of selected works from the early medieval period. Focuses on major types of literature produced during the period 500-1000 A.D., e.g., cultural, religious, historical, lyric, epic, biographical. Includes Augustine's Confessions, Boethius' Consolation, St. Gregory's Life of St. Benedict, The Life of Charlemagne, The Nibelungen, the Romance of the Rose, St. Bernard's Commentary on the Song of Songs. Prereq: Consent of instructor.

262 Medieval Culture: Readings from the Later Middle Ages, 1000-1500 (3) Critical analysis and interpretation of selected works from the later medieval period. Focuses on romantic, allegorical and mystical writings from the high and later Middle Ages, e.g., the Song of the Nibelungen, The Romance of the Rose, St. Bernard's Commentary on the Song of Songs. Prereq: Consent of instructor.

312-313 Medieval History (3,3) Same as History 312- 313.

322 Medieval Philosophy (3) Same as Philosophy 322.

371 Early Christian and Byzantine Art, to 1350 (3) Same as Art 371.

372 Northern European Painting, 1350-1500 (3) Same as Art 372.

381 Medieval Art of the West, 800-1400 (3) Same as Art 381.

382 The Art of Italy, 1250-1450 (3) Same as Art 382.

401 Dante and Medieval Culture (3) Same as Italian 401.

402 Petrarch and Boccaccio (3) Same as Italian 402.

415 Medieval Literature (3) Same as French 415.

415 Medieval Architecture (3) Same as Architecture 415.

475 Ancient and Medieval Political Thought (3) Same as Political Science 475.

MICROBIOLOGY (684)

200 Microbiology for Student Nurses (3) Only for student nurses in diploma program of hospitals affiliated with The University of Tennessee. Microbiological principles as they apply to nursing care of the patient, epidemiology of infection, and principles of immunity and allergy. 100 Introductory Microbiology (3) General properties of bacteria and viruses including physiology, metabolism, genetics, applied bacteriology, pathogenesis, and immunity. May not be used as part of the major in microbiology. 2 hours and 2 labs. E

310 Introduction to Microbiology (3) Introduction to the structure and function of bacteria, viruses, and fungi. Prereq: Consent of instructor.

319 Introductory Microbiology Laboratory (1) Basic techniques for the study of microorganisms, including morphology, identification, and physiology. Coreq: 310.


329 Advanced Microbiology Laboratory (2) Laboratory exercises designed to accompany 320 and 684.

330 Advanced Microbiology Laboratory (2) Laboratory exercises designed to accompany 320 and 684.

400 Laboratory Problems in Microbiology Laboratory (2) Laboratory exercises designed to accompany 320 and 684.

401 Undergraduate Research in Microbiology (3) Research experience in laboratory of faculty advisor, with faculty committee guidance. Prereq: Consent of instructor.

402 Microbiology Senior Honors Thesis (3) Supervised research, preparation and presentation of the senior honors thesis. Prereq: Senior standing, 401, 3.2 minimum grade point average in all course work, consent of department head.

410 Bacterial Physiology (3) Modern concepts of the structure and function of the bacterial cell. Prereq: Consent of instructor.

411 Bacterial Genetics (3) Transmission and expres-sion of genetic information by bacteria. Prereq: Consent of instructor.

420 Medical Microbiology (3) Disease producing microorganisms including bacteria, rickettsia, chlamydia and fungi. Prereq: Consent of instructor.

420 Medical Microbiology Laboratory (2) Laboratory exercises designed to accompany 420. Prereq: Consent of instructor.

430 Immunology (3) Principles of inflammation and immunity; immunoglobulin structure and theories of formation and diversity; complement; hypersensitivities. Prereq: Consent of instructor.

439 Immunology Laboratory (1) Laboratory exercises designed to accompany 430. Prereq: Consent of instructor.


449 Virology Laboratory (1) Laboratory procedures for isolation, handling, and culturing of animal viruses. Prereq: Consent of instructor.

470 Microbial Ecology (3) Physiological diversity and taxonomy of microorganisms from natural environments. Emphasis on the functional role of microorganisms in natural and simulated ecosystems. Prereq: Consent of instructor.

491 Foreign Study (1-15) E

492 Off-Campus Study (1-15) E

493 Independent Study (1-15) E

495 Senior Seminar (3) In depth consideration of microbiological problems of current interest requiring an integration of two or more disciplines. Emphasis on original literature and the experimental basis of current knowledge. Historical background, impact on society, predictions of the future, and the basis of moral and ethical judgements. Written reports required. A capstone course. Prereq: Senior standing. Writing-emphasis course.

MILITARY SCIENCE (688)

110 Basic Military Science (3) Introduction and training of the American defense establishment and its relation with American society, customs and tradi-tions of the army, aspects of military physical fitness training; selected topics dealing with current world af-fairs; challenges facing the military in the future. Prereq: United States citizen; freshman or sophomore standing. Students with higher standing may obtain consent of instructor. Letter grade only.

120 Leadership Development Techniques (2) Intro-duction to basic leadership theory, human motivation theory, and principles of efficient and effective communicati-ions. Application of theories and principles in indi-
400 Advanced Camp-Practicum (4) 240 contact hours of instruction and evaluation at Fort Knox, Kentucky over a six week period during the summer. Prereq: United States citizen; physically qualified; at least sophomore standing in the University (either undergraduate, graduate or in pursuit of additional course work); cumulative GPA 2.00 or above; legally qualified. Letter grade only. Su

210 Basic Military Leadership (2) Course of leadership principles and skills, with emphasis given to significant leaders, events, and situations, from 1636 to present. Prereq: 120 or consent of the Professor of Military Science. Letter grade only. F

220 Basic Officer Skills (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 enemy prisoners of war (EPW), execution of individual/unit movement techniques, and the exercise of leadership. Prereq: 210 or consent of the Professor of Military Science. Letter grade only. Sp

310 Advance Military Studies I (4) Discussion and practical exercises including operation of the military team, land navigation, small unit patrolling, and physical fitness. Tactical and administrative roles in the military are the classroom application 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 be physically qualified; cumulative GPA 2.00 or higher; legally qualified; 3 or 4 years of JROTC (or) 110, 120, 210, 220 completion (or) four credits of coursework in a related discipline. May be repeated once for credit. 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, S

241 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, S

320 Advance Military Studies II (4) Preparation of the future officer leader of Army to excel at MS 400 Advanced Camp Practicum. Instruction builds on lessons learned in the 310 and refines small unit leadership skills, map reading, techniques, oral and written communication skills, and physical fitness. Includes three field exercises and a Casualty Evacuation Staff Exercise. Prereq: 310. Letter grade only. 3 hours and 1 hour lab. Sp

400 Advanced Camp-Practicum (4) 249 contact hours of instruction and evaluation of leadership skills, group dynamics, communication skills, 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 duties and relationships including logistics, personnel systems, efficiency reports, correspondence, training management, planning, teaching, security, strategic force positioning, and non-commissioned officer relationships. 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 justice system, individual leadership. Law of War/Lawfare. Prereq: 310, 320 and 400, 410 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.

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. May be repeated. Maximum 4 hours. Letter grade only. F

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. Sp

230 Class Music Methods for the Elementary School (3) Methods and materials for teaching music in the elementary grades. Primarily intended for music education majors. Prereq: Consent of instructor and admission to Teacher Education Program. Letter grade only. F

250 Functional Piano for Teachers (1) Practical piano skills for the general/vocal teacher who does not have a keyboard instrument as the applied principal. Technique, tonal, improvisation, ear training, ear scoring, accompaniments. May be repeated once for credit. F, Sp

260 Eurythmics (1) Principles and practice of eurythmics, as developed by Emile Jaques-Dalcroze. Prereq: Consent of instructor. May be repeated once for credit. Maximum 2 hours. Letter grade only. F, S

300 Music for Elementary Teachers (2) Singing, rhythmic activities, instrumental activities, listening, music reading, and creative activities appropriate for the elementary grades. For elementary 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, metering of the left hand, subdividing, Mechanics of full score. Video tapes of great conductors. Conducting "live" groups. Video tapes of 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 interpreting of the full score. Achieving complete physical control. Rehearsal techniques. Conducting "live" groups in advanced works. Video tapes of great conductors. Prereq: Conducting I or consent of instructor and admission to Teacher Education Program. Letter grade only. Sp

330 Music Methods for the Elementary School (3) Methods and materials for teaching music in the elementary grades. Primarily intended for music education majors. Prereq: Consent of instructor and admission to Teacher Education Program. Letter grade only. F

350 Field Experience in Music Education (1) Prereq: Consent of instructor and admission to Teacher Education Program. May be repeated. Maximum 3 hours. Satisfactory/No Credit only. E

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

420 Music Methods for the Junior High School and Middle School (3) Methods and materials for teaching vocal, instrumental, and general music at the junior high school or middle school level. Prereq: Admission to Teacher Education Program and consent of instructor. Letter grade only. F

430 Music Methods for High School (3) Methods and materials for vocal and instrumental music at the high school level, including charting for the marching band. Prereq: Admission to Teacher Education Program and consent of instructor. Letter grade only. F

440 Marching Band Techniques (2) Functions, organization, and direction of a school marching band. Letter grade only.

481 Internship I: Grades K-12 (3-6) Methods and theories of teaching. Internship is completed in local public schools. Prereq: K-12 classroom teaching certification. Prereq 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 K-12 (3-6) Demonstration of professional performance in planning, instruction and classroom management. Internship is completed in local public schools. Prereq: 481 and admission to the Teacher Education Program. Satisfactory/No Credit only. Sp

490 Special Topics in Music Education (1-3) Prereq: Consent of instructor. May be repeated. Maximum 9 hours. Letter grade only. E

493 Independent Study in Music Education (1-5) Prereq: Consent of instructor. May be repeated. Maximum 9 hours. Letter grade only. E

495 Advanced Music Methods for Elementary Teachers (3) Continuation and amplification of the concepts and skills covered in Music Education 430. Prereq: Admission to Teacher Education Program. Letter grade only. J, K, L

MUSIC ENSEMBLE (708)

301-501 Woodwind 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. 309-509 Tubas 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. 313-513 Synthesizer 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 12 hours. 320-520 UT Singers (1,1) May be repeated. 330-530 Chamber Singers (1,1) May be repeated. 332-532 Collegium (1,1) May be repeated. 334-534 Saxophone Choir (1,1) May be repeated. 340-540 Opera Theatre (1,1) May be repeated. 342-542 Opera Workshop (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. 355-556 Laboratory Band (1,1) May be repeated. 359-559 Marching Band (1,1) May be repeated. 370-570 Symphony Orchestra (1,1) May be repeated. 380-580 Concert Choir (1,1) May be repeated. 382-582 University Chorus (1,1) May be repeated. 383-583 Men's Chorus (1,1) May be repeated. 389-588 Women's Chorus (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 Western music from the ancient world through the 20th century. For non-music majors. Writing-emphasis course.

120 History of Rock (3) Study and appreciation of rock music, its origins in blues and rock and roll, its development and cultural dimensions to the present. Writing-emphasis course.

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 a week. Prereq: Admission to Music Ensemble 301-389. Prereq: 110 Fundamentals of Music (3) or consent of instructor. Letter grade only. E

200 Solo Class (0)
MUSIC HISTORY (709)

200 Introduction to Music Literature (3) Basic forms of music and accepted masterworks through chronological approach. For music majors and minors only.

210-220 History of Music I, II (3,3) 210 to 1750, 220 to 1750 to present. Prereq: 200. Must be taken in sequence.

310 Introduction to Afro-American Music (3) History of African music, blues, gospel music, and jazz with emphasis on Black artists and their contributions. (Same as Afro-American Studies 310.)

330 Women in Music (3) History of women in music from the Middle Ages to present as composers, performers, educators, and patrons. (Same as Women's Studies 330.)

350 History of Jazz (3) Origin, development, and styles of jazz music and its exponents. Cultivation of special listening techniques. (Same as Afro-American Studies 350.) Writing-emphasis course.

380 Introduction to Folk and Popular Musics (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 review course for graduate students. Prereq: Consent of instructor.

410 Music History Genre (3) Topics vary. May be repeated for credit. Maximum 8 hours.

420 History of Opera (3) Dramatic, vocal, and orchestral elements of opera. Italian, French, and German schools, 1600-present.

430 Symphonic Literature (3) Survey of literature for orchestra from Baroque to the present, with emphasis on the evolution of the symphony.

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. Subjects vary.

460 Music Aesthetics (3) Nature of music and musical experience, sense perception and emotions, music, and role of artist in society. Aesthetic viewpoint of individuals and historical areas through selected writings. Writing-emphasis course.

480 Music in Christian Worship (3) Hymnody, liturgy, and liturgical music.

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 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 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) 340-Survey of string techniques, issues, research and pedagogical topics presented by the applied string faculty and class members. Development of the violin family of instruments and bows; survey of string literature, performances, and performance styles; application of historical, analytical, and pedagogical procedures to performance. Prereq: 340 and applied enrollment in strings at 300 level or above or consent of instructor.

410 Band Arranging (3) Study and application of techniques employed in scoring for the marching and concert bands. Prereq: Music Theory 320.

490 Instrumental Conducting (3) Knowledge and skills in instrumental conducting; various periods and composers and relationship of different styles to the conductor's art; musical analysis and practice in conducting. Prereq: Music Education 320 or equivalent.

495 Suzuki String Pedagogy (3) Psychology, procedures, and literature of the Suzuki violin method and pedagogy. May be repeated. Maximum 8 hours. Prereq: Consent of instructor.

MUSIC JAZZ (711)

110 Jazz Theory (2) Fundamentals of the jazz language, including terminology, chord symbols, chord scales, and chord progressions, plus ear-training lab. 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 cymbal and percussionists who have contributed significantly to creation of principal styles of jazz drumming.

210-220 Jazz Improvisation I, II (2,2) Study and application of principles of improvisation, including nomenclature, chord progressions, chord scales, patterns, melodic development, and tone styles. Prereq: 110.

310 Jazz Composition and Arranging (2) Prereq: Consent of instructor.

320 Jazz Band Arranging (2) Arranging and scoring for the Big Jazz Band. Prereq: Consent of instructor.

410 Advanced Improvisation (3) Development of individual skills and solving individual problems in jazz improvisation. Prereq: 210 and 220.

420 Jazz Pedagogy (1) Methods and materials related to teaching of jazz, designing and administering jazz programs, and rehearsal techniques for jazz ensembles. Prereq: Studio Music and Jazz major or consent of instructor.

430 Keyboard Harmony (1) Melody harmonization, figured bass realization, and improvisation. Prereq: Music Theory 110-120.


470 The Organ and Its Literature I, II (3,3) Development of the organ and organ literature from the Middle Ages to the present; problems of style and interpretation; pedagogical literature and methods; organ design. Prereq: or Coreq: Music History 220 and consent of instructor.

480 Teaching Class Piano (3) Historical survey and evaluation of teaching materials and methodology for college and/or adult beginning piano classes, with collateral teaching experience. Prereq: Consent of Instructor.

485 Suzuki Piano Method I (2) Study of the psychology, procedures, and literature of the Suzuki piano method. Must be taken in sequence. Prereq: Consent of Instructor.

489 Suzuki Piano Method II (2) Study of the psychology, procedures, and literature of the Suzuki Piano Method. Prereq: Consent of instructor.

MUSIC PERFORMANCE (713)

103-203-303-403-503 Flute (1-4) May be repeated.

105-205-305-405-505 Oboe (1-4) May be repeated.

110-210-410-510 Bassoon (1-4) May be repeated.

115-215-315-415-515 Clarinet (1-4) May be repeated.

120-220-420-520 Saxophone (1-4) May be repeated.

125-225-325-425-525 Horn (1-4) May be repeated.

130-230-330-430-530 Trumpet (1-4) May be repeated.

135-235-335-435-535 Trombone (1-4) May be repeated.

140-240-340-440-540 Baritone (1-4) May be repeated.

145-245-345-445-545 Tuba (1-4) May be repeated.

150-350-450-550 Percussion (1-4) May be repeated.

155-255-355-455-555 Voice (1-4) May be repeated.

160-260-360-460-560 Violin (1-4) May be repeated.

165-265-365-465-565 Viola (1-4) May be repeated.

170-270-370-470-570 Cello (1-4) May be repeated.

175-275-375-475-575 String Bass (1-4) May be repeated.

180-280-380-480-580 Piano (1-4) May be repeated.
MUSIC THEORY (714)

110 - 120 Theory I, II (3,3) Materials of music including basic elements through triads and seventh chords and modulation. Exercises in writing and analysis of music with emphasis on common practice.

130 - 140 Ear Training I, II (1,1) Development of proficiency in identifying and notating melodic, harmonic, and rhythmic models. Includes computer lab. Must be taken in sequence. Should be taken concurrently with 110 - 120. A,B,C,NC grading.

210 - 220 Theory III, IV (3,3) Materials of music with emphasis on literature of Classic, Romantic, and contemporary periods. Exercises in writing and analysis. Must be taken in sequence. Prereq: 120 or consent of instructor.


250 Composition (2) Writing short vocal and instrumental compositions using conventional and new forms of notation. Prereq: 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. Topics include room acoustics, audio measurements, microphones, studio and real-time processing, noise reduction, mixing, editing, monitors, system wiring, and maintenance.

310 Form and Analysis (3) Study and practice in analysis of forms of music from smallest structural units to large compound forms. Prereq: 220.

320 Orchestration (3) Study of capabilities of orchestral instruments and techniques of scoring for ensembles and concert orchestra and band. Prereq: 220.

340 Introduction to Computer Music Transcription (3) Exercise in notation, playback and publishing incorporating elements of word processing, graphic design, and file sequencing and page layout. Study of Music Instruments Digital Interface protocol as it applies to computer music workstation design. Prereq: consent of instructor.

390 Sound Synthesis Techniques (3) Studio and real-time applications of synthesizers. Historical background, theoretical concepts, equipment interface and usage, analysis of sounds and compositions. Prereq: 290 or consent of instructor.

400 Survey of Music Theory (3) Emphasis on harmonic practice of Baroque, Classic, and Romantic periods. Exercises in writing and analysis. Recommended as a review course for graduate students. Prereq: Consent of instructor.

430 - 440 Counterpoint I, II (3,3) 430-Species counterpoint in modal and tonal styles with emphasis on works of Palestrina and J.S. Bach. Prereq: 220. 440-Writing of contrapuntal forms of the 18th century and fugue analysis of works from the 18th through the 20th centuries. Prereq: 430.

450 Choral Arranging (2) Analysis of scores and writing of arrangements for choirs. Prereq: 220 or consent of instructor.

493 Independent Study in Music Theory (1-15) May be repeated for credit. Prereq: Consent of department head.

MUSIC VOICE (715)

110 Class Voice I (1) Development of basic vocal skills. May be repeated for credit. Maximum 2 hours.

120 Class Voice II (1) Prereq: Consent of instructor. May be repeated for credit. Maximum 2 hours.

210 Vocal Techniques in Popular Music (1) Development of performance techniques in Broadway and other contemporary musicals. Prereq: Consent of instructor. May be repeated for credit. Maximum 4 hours.

220 Introduction to Music Theatre Technology (2) Stage technology unique to lyric stage.


240 - 250 Diction I, II (2,2) Sounds by phonetic symbols. Opera and art songs used for examples. Performance practice.

330 Opera Production (1-3) Supervised work on opera productions. May be repeated for credit. Prereq: Consent of instructor. Maximum 12 hours.

410 - 420 Song Literature I, II (2,2) 410-German songs. 420-French, Italian, Russian, Scandinavian, Czechoslovakian, British, and American art songs.

430 Styles in Opera Acting (2) Study and practice of styles in opera acting through historical and national characteristics.

440 Projects in Opera Theatre (1-3) May be repeated for credit. Prereq: Consent of instructor. Maximum 9 hours.

450 - 460 Pedagogy I, II (1,1) 450-Concepts and approaches to teaching singing (past and present). 460- Vocal teaching materials, including collaborative teaching experiences. Prereq: Consent of instructor.

NURSING (720)

202 Health and Culture (3) An exploration of the beliefs and practices of various cultural groups within the United States in relation to health, illness and the health care delivery system. Implications for the helping professions are examined. Course has no prerequisites and is open to all UT, Knoxville undergraduate students.

214 Integrated Biomedical and Health Sciences (1-3) Examination and application of selected theories from physics and chemistry, microbiology, and nutrition to nursing process. Each module carries one credit. Prereq: One year of biology or chemistry or consent of instructor.

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: Chemistry 100-10 and 6 semester hours of anatomy and physiology.

302 Introduction to Professional Nursing (3) 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 require in-patient services. 8 lectures, 3 lab. Coreq: 301 and 304.

304 Nursing Assessment and Wellness Promotion (4) Development, psychosocial, cultural, environmental, spiritual, family, and physical dimensions of health assessment. Collection, analysis, and application of assessment data in formulation of 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. Coreq: 301, 302, 304.

305 Transition to Professional Nursing (6) 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. 5 lectures, lab. For RN’s only.

311 Acute Care Nursing (10) Continuation of 302 with emphasis on physiological and behavioral deviations which underlie or are associated with more complex and critical illnesses of adults and children. Clinical laboratory experiences in adult and pediatric acute care settings for enhanced knowledge and skill in providing nursing care for children and adults with complex and critical illnesses. 8 lectures, 4 lab. Prereq: 301, 302 and 304.

312 Acute Care Nursing Therapy (6) Theoretical component of 311. For RN’s only. Prereq: 301, 305.

313 Introduction to Nursing Research (3) Language of research, types of research designs, methodological approaches to sampling, data analysis, and significance of findings. Evaluation of existing and ongoing nursing research studies. Prereq: 302 or consent of instructor.

315 Clinical Nursing Practicum (2) Application of nursing process, principles, and concepts to care of hospitalized clients. Prereq: 305. Coreq: 304, 312. For RN’s only. Satisfactory/No Credit only. Sp, Su.

317 Wellness and Lifestyle (3) Models of wellness and holistic health within the framework of modern medicine, eastern philosophy, and recent discoveries about the interaction of mind and body. Biopsychosocial interactions of lifestyle and genetic risk factors for cardiovascular and malignant diseases, wellness potential, and potential longevity. Process of lifestyle changes will be facilitated by faculty. Open to undergraduate students in all colleges.

320 Advanced Placement Credit: Care of the Adult Client (3) For registered nurses only. Satisfactory/No Credit only. Sp.

321 Advanced Placement Credit: Care of the Childbearing Client (3) For registered nurses only. Satisfactory/No Credit only. Sp.

322 Advanced Placement Credit: Care of the Child (2) For registered nurses only. Satisfactory/No Credit only. Sp.

323 Advanced Placement Credit: Care of Client with Mental Disorder (3) For registered nurses only. Satisfactory/No Credit only.

401 Family Health Nursing (6) Nursing needs of families in health and in crisis. Provision of comprehensive care to families in the childbearing and childrearing phases of family development. Application of theories of human growth and development, family dynamics, and crisis intervention to provision of nursing care to families experiencing normal pregnancy and child birth and to those experiencing such health problems or complications as congenital anomalies, high risk birth, disturbed parent-child relationships, or one or more of the complex disorders. 3 lectures, 3 lab. Prereq: All 300 level nursing courses.

402 Family Health Nursing Theory (3) Theoretical component of 401. For RN’s only. Prereq: 312. F, Sp.

403 Community Health Nursing (6) Application of the nursing process to care of individuals, families, and groups in home and community settings with special emphasis 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. Political, social, economic, environmental, and ethical issues related to community health nursing. 3 lec., 1 sem., 2 lab. Prereq: All 300 level nursing courses.

405 Professional Nursing Seminar (2) Critical examination and evaluation of legislative, legal, ethical, social, and educational barriers and trends that have immediate and long-range implications for professional nursing practice. Prereq: Senior standing. For nursing majors only.

409 Nursing Management and Strategies (6) Management and leadership principles and their application to clinical situations. Course topics include decision making, policy and procedure development, quality assurance, staff development, staffing patterns, nursing service delivery models, nursing practice standards, and evaluation of nursing change. Some case studies are provided for development of entry level nursing management role. 3 lec., 3 lab. Prereq: 10 credits of 400 level nursing courses or consent of instructor.

411 Psychosocial Long-Term Nursing (8) Nursing needs of individuals whose health condition is enduring, developmental, behavioral, or long-term nature. Emphasis on prevention, wellness promotion, and rehabilitation. Nursing laboratoryclinical experiences with a
psychiatric and chronic illness emphasis in a variety of acute, extended care, and rehabilitation facilities. 3 lectures, 3 lab. Prereq: All 300 level nursing courses. Sp, F.

412 Psychosocial Long-Term Nursing Theory (3) Theoretical component of 411. For RN's only. Prereq: 312, Sp, F.

414 Community Mental Health Nursing (6) Nursing needs of clients and groups with psychosocial and/or long-term health problems. Clinical experiences provide opportunities for students to apply the nursing process to individuals, families, and groups in acute and extended care, and community settings. 3 lectures, 3 lab. Prereq: All 300 level nursing courses. For non-nurse MSN students only. F.

415 Family-Community Health Nursing (6) Application of the nursing process to individuals, families, and groups in the childbearing/rearing stages of development. Clinical experiences are provided in a variety of hospital and community settings. 3 lectures, 3 lab. Prereq: All 300 level nursing courses. For non-nurse MSN students only. Sp.

450 Physiological Principles (3) Concepts and principles of normal human physiology; tissue and organ physiology as a basis for integration of system physiology and for understanding pathophysiologic mechanisms. Prereq: RN status or consent of instructor. No credit for students who have taken 302, 305, 311 or 312. F, Sp.

451 Computers and Nursing Care (3) Computerized information processing with application to patient care, health care administration, nursing education, and nursing research. 2 lectures, 1 lab. Prereq: All 300 level nursing courses or consent of instructor.

453 Oncology Nursing (4) In-depth exploration of cancer problem; relates cellular kinetics to theories of carcinogenesis and metastasis; treatment modalities and nursing interventions employed in all phases of the disease. Interdisciplinary approach analyzed. Prereq: 411 or 412 or consent of instructor.

470 Special Topics (1-3) Indepth 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 or health-related topic not covered in other nursing courses. Prereq: Senior standing or permission of instructor.

NUTRITION (725)

100 Introductory Nutrition (3) Nutritional concepts; current consumer issues in nutrition; nutritional needs through life cycle; physiological impact of dietary components on body functions and/or issues. A student who has received credit for NTR 107 or 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. F, Sp.

105 Food for the Next Century (3) Independence of people on this planet for food; global perspective from United States point of view. F.

107 Honors: Introductory Nutrition (3) Nutritional concepts; current consumer issues in nutrition; nutritional needs through life cycle; physiological impact of dietary components on body functions and/or issues. A student who has received credit for NTR 107 or 300 may not receive credit for this course. F, Sp.

200 Physiological Chemistry (4) Metabolism of carbohydrates, lipids, and nitrogenous compounds; role of vitamins and minerals as coenzymes and prosthetic groups. Prereq: Chemistry 110 or equivalent. F.

201 Food and Clinical Analysis (4) Principles, procedures, instrumentation for analysis of food and body fluids. Prereq: 200 with a grade of C or better for NTR majors. 2 hours and 2 labs. F, Sp.

300 Fundamentals of Nutrition (3) Nutrition in normal and altered health states during life cycle; nutritional analysis of diets. Prereq: Chemistry 110 or equivalent, Zoology 200. A student who has received credit for NTR 100 or 107 may not receive credit for this course. Sp.

301 Nutrition for Educators (3) Principles of nutrition; biochemical and physiological aspects of nutrition during the life cycle; nutrition education concepts and strategies. Prereq: 100 or 107, 101, Chemistry 100 or equivalent, Zoology 230, or consent of instructor. A, Sp.

312 Science of Food (4) Chemical and physical properties of food related to functional and nutritional properties; sensory evaluation and concepts and techniques; effects of processing on food; application of food principles to clinical nutrition. Prereq: 100 or 107, 101, Micro 210, 3 hours and 1 lab. F.

313 Advanced Nutrition (4) Integrated knowledge of physiological chemistry and physiology applied to understanding human nutrition requirements; computer analysis of dietary adequacy. Prereq: 100 or 107, Zoology 230. F.

410 Professional Issues in Dietetics (1) Dietetic registration, licensure, third party payments; dietetic practice; marketing dietetics; internship preparation; professional ethics in dietetics. Prereq: Senior standing. F.

411 Nutrition in Disease (4) Metabolic processes of diseased organs and/or tissues; dietary modifications required. Prereq: 312, 313, F.

412 Food and Nutrition Resources Management (3) Integration of community food and nutrition resources; geographic, social, economic, educational, cultural, health characteristics associated with food and nutritional problems and the need for services by individuals in community public policy. Prereq: or Coreq: 411, Sp.

413 Experimental Food Science (3) Individual and group laboratory experimentation in food science; microcomputer applications. Prereq: 312, PSSC 471, 1 hour and 2 labs. F.

414 Nutrient-Drug Interactions (2) Nutrient effects on efficacy and toxicity of drugs; drug effects on absorption, metabolism of nutrients. Prereq: 300 or equivalent. A, Sp.

450 Special Topics: Nutrition (1-3) Developments, issues and problems in Nutrition; topics variable. Prereq: Senior standing, consent of instructor. May be repeated. Maximum 3 credits. E.

487 Honors: Nutrition (1-3) Senior project. Prereq: Junior or Senior standing in NTR or consent of instructor. May be repeated. Maximum 3 credits. E.

492 Field Experience: Nutrition (1-3) Prereq: Junior or Senior standing, consent of instructor. Satisfactory/No Credit only. E.

493 Directed Study: Nutrition (1-3) Individual student/faculty experience. Prereq: Junior or Senior standing, consent of instructor. Satisfactory/No Credit only. E.

ORNAMENTAL HORTICULTURE AND LANDSCAPE DESIGN (740)

110 Environmental Horticulture (3) Basic plant sciences and their relationship to ornamental horticulture. Introduction to awareness and appreciation of ornamental plants, design and management of home landscapes, selection and use of herbaceous plants and turfgrasses. 3 hours. F.

210 Floral Design (2) Principles and techniques of basic flower arranging with emphasis on arrangements for home and special use. Lab fee will be charged. 2 labs. F, Sp.

220 Basic Landscape Plants (2) Identification, classification, adaptation, culture and landscape design uses of basic ornamental trees, shrubs, and vines. Prereq: 8 hours Botany or consent of instructor. 2 labs. E.

230 Interior Plants (2) Identification, culture, design application, and propagation of foliage plants used in the interscape, introduction to interscape management. 2 labs. F, Sp.

280 Fundamentals of Landscape Design (3) History of landscape design as it relates to contemporary application. AWARENESS AND EMPOWERMENT OF LANDSCAPE BASIC SKILLS AND DESIGN THEORY WITH AN EMPHASIS ON RESIDENTIAL LANDSCAPE PLANNING. Introduction to landscape basic skills and design theory with an emphasis on residential landscape planning. Prereq: 110, 220 or consent of instructor. 1 hour and 2 labs. E.

310 Greenhouse Production and Management (3) Management and operation of a greenhouse for commercial purposes, research and institutional use, and home hobby purposes. Culture and management of economically important florists' crops in the United States; basic physiological principles, including photosynthesis, thermoperiodism, growth regulation, and nutritional requirements of crops. Prereq: 110 or consent of instructor. 2 hours and 1 lab. F.

320 Plant Materials (2) Identification, classification, and uses of ornamental plants including trees, shrubs, vines and herbaceous plants and generally excluding those covered in 220. Prereq: 220 or consent of instructor. 2 hours. F, Sp.

330 Plant Propagation (3) Physiology, methodology, and environmental requirements for propagation. Prereq: 110 and 8 hours Botany or consent of instructor. 2 hours and 1 lab. F.

340 Turfgrass Management (3) Practical turfgrass management; cultivation, identification, and establishment; basic applied fertility programs, mowing, and irrigation practices, and thatch and compaction control; pest identification and basic controls. Prereq: 110, Plant and Soil Science 210 and 8 hours of Botany or consent of instructor. 2 hours and 1 lab. F.

350 Basic Landscape Construction (3) Basic materials and detailing. Introduction to the landscape construction and contracting industry; application of landscape construction materials; wood, concrete and masonry construction; soil drainage, and landscape grading. Prereq: 280. 2 hours and 1 lab. F.

360 Practicum in Landscape Construction (3) Practical experience in implementing landscape development projects. Directed lab and field instruction in planting operations and basic landscape construction including interpreting and implementing landscape design drawings and specifications. Prereq: 350. Two three hour labs. F.

370 Grounds Maintenance (3) Identification and understanding of maintenance tasks; transplanting, soil amendments, growth control, irrigation, climate protection and pest control. Maintenance and use of equipment; management practices. Prereq: 110, 2 hours and 1 lab. F.

380 Supplemental Landscape Design Graphics (2) Refinement of graphic skills. Sketches, elevations, sections, isometric projections, and perspectives. Lettering, plan graphics, color rendering, and other visual presentation media. Prereq: 280. Two 2 hour labs. F.


440 Advanced Turfgrass Management (4) Principles and scientific basis of turfgrass culture; adaptation, ecology, physiology, soil fertility, and grass nutrition; climatic influences on grass culture; physiology of clipping and mowing; water management; disease and pest management; management of golf courses; physiological influences of pest infestation and control measures. Prereq: 340 or consent of instructor. 3 hours and 1 lab. Sp.

540 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 landscape construction. Prereq: 350. 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, proposals, bidding, estimating, specifications, and contract management in landscape services industry. Computer technology applicable to landscape construction and contracting industry. Includes presentations by industry representatives. Prereq: 350 or consent of instructor. 2 hours. F, Sp.

480 Advanced Landscape Design (4) Comprehensive application of landscape design skills. Design applications involving site layout, landscape grading, applied landscape construction, and planting design. Analysis, programming, design, detailing, estimating, and specifying applicable to a variety of landscape projects. Prereq: 280, 350, and 380. 1 hour and 3 three hour labs. Sp.
PHILOSOPHY (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. (Same as Religious Studies 344.)

111 The Human Condition: Knowledge and Reality (3) The place of mind in a material universe and the nature and possibilities of human knowledge. May be taken before 110. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom. (Same as Religious Studies 345.)

120 Foundations of Western Thought: Antiquity through 1500 (3) Plato, Latin Antiquity and the Medieval Period. Writing-emphasis course.

121 Foundations of Western Thought: 1500 through Early Seventeenth Century (3) Development of Rationalist and Empiricist thought; Nineteenth Century and early Twentieth Century philosophy. May be taken before 120. Writing-emphasis course.

130 Critical Thinking (3) An introduction to practical reasoning in natural language, designed to enhance skills in recognizing, analyzing, evaluating and constructing arguments. Satisfies Basic Skills Requirement "Mathematics, Computer Science or Logic".

135 Formal Logic (3) Introduction to formal deductive systems; propositional and predicate logic. Satisfies 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 and personal values and principles in theoretical and practical 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.

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 522.) Writing-emphasis course.

324 Seventeenth- and Eighteenth-Century Philosophy (3) Writing-emphasis course.

325 Nineteenth- and Twentieth-Century Philosophy (3) Writing-emphasis course.

335 Intermediate Formal Logic (3) Metatheory of formal logic and philosophy of logic. Prereq: 135 or consent of instructor.

342 Business Ethics (3) Ethical problems as they confront both 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 belli).

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.

362 Conceptual History of Science (3) Historical evolution of thought in astronomy, mechanics, and the study of living things, from the Greeks through the early twentieth century. Prereq: 8 hours of physical science or consent of instructor.

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, praxis, 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 6 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: 8 hours of philosophy or consent of instructor. When content varies, may be repeated. Maximum 6 hours.

425 American Philosophy (3) Colonial to early 20th Century. Prereq: 6 hours of philosophy or consent of instructor. Writing-emphasis course.

430 Topics in Logic (3) Prereq: 6 hours of logic or consent of Instructor. When content varies, may be repeated. Maximum 6 hours.

440 Contemporary Ethical Theory (3) Topics in metaethics or ethics. Prereq: 6 hours of philosophy or consent of instructor.

446 Theoretical Issues in Medical Ethics (3) Prereq: 240 or 345 or consent of instructor. (Same as Religious Studies 446.)

460 Philosophy of Science (3) Methodological and conceptual issues in the natural and social sciences: patterns of theory modification and replacement, the status and justification of theoretical entities. Prereq: 360 and one year of natural or social science, or consent of instructor.

465 Philosophy of History (3) Speculative and critical aspects of philosophy of history. Prereq: 6 hours of philosophy or consent of instructor.

473 Philosophy of Mind (3) Problems of mind and body in relation to consciousness and personal identity. Prereq: 6 hours of philosophy or consent of instructor.

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 Philosophy of Language (3) Survey of issues such as meaning, reference, and truth. Prereq: 6 hours of philosophy or consent of instructor.

479 Studies in Recent Continental Philosophy (3) Selected thinkers or topics from areas such as Existentialism, Phenomenology, Hermeneutics, Structuralism, Post-structuralism. Prereq: 6 hours of philosophy or consent of instructor. When content varies, may be repeated. Maximum 6 hours.

501 Foreign Study (1-15)

492 Off-Campus Study (1-15)

493 Independent Study (1-15)

PHYSICAL EDUCATION SERVICE 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 WSI-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 (1)

211 Golf (1)

212 Handball (1)

213 Ice Skating (1)

214 Elementary Jazz (1)

216 Martial Arts: (Special Topics) (1)

219 Coed Gymnastics: Men's Apparatus (1)

220 Elementary Modern Dance I (2)

221 Elementary Modern Dance II (2)

222 Paddlesball (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 (1)

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)
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 logic, using a minimum of mathematical analysis. 121- Description of motion, forces, energy and momentum, properties of matter. 122-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 engineers and liberal arts majors in mathematics and the physical sciences. Basic Engineering 121-121 is equivalent course for engineers. Must be taken in sequence. Coreq: Mathematics 141-142. 3 hours lecture, 2 hours lab.

137-138 Honors: Fundamentals of Physics: Mechanics and Heat (4,4) Honors for physics majors and qualified students from other disciplines. Must be taken in sequence. Coreq: Mathematics 141-142. 3 hours lecture, 2 hours lab.

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, quantum mechanics, quantum field theory, and science and society. Must be taken in sequence. 3 hours lecture including demonstration lab.

145 Physics of Athletic Activity (3) Principles of physics, particularly mechanics and energy, with emphasis on their role in physical activities, particularly sports-related. Topics include statics, equilibrium, linear and angular motion, momentum, force, work, and energy. 3 hours lecture, 3 hours 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, 2 hours lab.

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 required in pre-medical, pre-dental, pre-pharmacy, and engineering programs. Coreq: Mathematics, heat, wave motion, and optics. 222-Electricity and magnetism, modern physics. Must be taken in sequence. 3 hours lecture, 3 hours lab. Prereq: Math 121-122, or 141-142 or 151-152.

231 Fundamentals of Physics: Electricity and Magnetism (3) For engineers and liberal arts majors in mathematics and the physical sciences. Required of all engineering students. Coreq: 131-132 or Basic Engineering 121-131. Coreq: Mathematics 231. 2 hours lecture, 3 hours lab/ recitation.


237 Honors: Electricity and Magnetism and Light (4) Honors course for selected students admittance on basis of performance in 131-132, 137-138 or Basic Engineering 131-132. Coreq: Mathematics 231. 3 hours lecture, 3 hours lab.

238 Honors: Wave Motion and Modern Physics (4) Honors course for selected students. Continuation of 237. Prereq: 237. Coreq: Mathematics 241. 3 hours lecture, 3 hours lab/recitation.


321 Thermal Physics (3) Concepts of temperature and heat; laws of thermodynamics; elementary statistical mechanics; applications to physical and chemical problems. Prereq: 311-312 and consent of instructor.

340 Relativity and the Structure of the Atom (3) Special relativity and the wave model of the atom. Fundamental concepts of modern physics and their applications to atomic systems. Prereq: 231.

341-342 Structure of Matter (3,3) 341-Subatomic physical theories, including physics of the nucleus and elementary particles. 342-Physics of molecules and condensed matter. May be taken in either order. Prereq: 340.

361-362 Electronics Laboratory (3,3) Electronic components, circuits and instruments for physicists, with emphasis on application to simple instruments in instrumentation. 361-Analog electronics, including fundamental network theories, complex impedance and admittance, frequency response and resonance, feedback, operational amplifiers, oscillators, and various semiconductor devices, as applied to scientific instrumentation. 362-Digital electronics, including elementary building blocks of relevance to data acquisition systems, digital to analog conversion, analog to digital conversion, simple applications of microprocessors. Prereq: 222 or 232. 6 hours lab per week.

390 Junior Seminar (1-3) Topic of current interest. Prereq: Introduction to Physics. May be repeated with consent of department. Maximum 6 hours.

401 A Survey of Physics (3) A survey of physics from earliest times to the present, emphasizing the unifying philosophical and mathematical principles. Classical theories of gravitation, electromagnetism, and relativity; various forms of quantum mechanics, quantum electrodynamics, and recent theories of particles, fields, and their interactions; the effects of physics on modern society and the practice of physics from a value-oriented perspective. Written reports on important original papers, thought-provoking problems combined with critical analysis, and a final oral and written report on some independent study. Prereq: Senior standing in Physics or consent of instructor.


421 Modern Optics (4) Transmission of light in uniform, isotropic media, reflection and transmission at interfaces; mathematics of wave motion and interference effects; diffractions and holography. Prereq: 431 or 232 and consent of instructor. 3 hours lecture, 3 hours lab.

425 Principles of Non-Destructive Testing (3) (Same as Engineering Science and Mechanics 425.)


461-462-463 Modern Physics Laboratory (3,3,3) Variety of experimental techniques, including spectroscopy, electronic measurements, computer interfacing, resonant detectors and instrumentation applied to experiments in nuclear, atomic, molecular, and solid state systems. Classic experiments in quantum physics for engineering undergraduates. Prereq: 232 and a basic knowledge of circuits.

471-472 Health Physics (3,3) Radioactivity, interaction of electromagnetic radiation with matter, radiation quantities and units, point kernel and extended sources, X-rays and other electromagnetic waves, nuclear transformation of charged particles with matter, stopping power, range-energy relations, counting statistics, shielding, dosimetry, waste dispel, criticality prevention, radiation biology and ecology. Prereq: 340 or 341.

480 Senior Seminar (1-3) Topics of current interest. May be repeated with consent of department. Maximum 6 hours.

491 Foreign Study (3-15)

492 Off-Campus Study (3-15)

493 Research and Independent Study (1-3) Research and study in field of particular interest with faculty guidance. Consent of department is required. Maximum 6 hours.

PLANNING (782)

401 The City in the United States (3) Development and character of United States cities. Contemporary issues and selected case studies. (Same as Urban Studies 401.)

402 Survey of Planning (3) History of city development and of planning with special attention to the United States. Social science in urban studies. An understanding of various aspects of State of the art, the comprehensive plan, implementation devices. Planning issues in society. Not for credit for M.S.P. degree. (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. Sp

210 Introduction to Soil Science (4) Differences in soils; soil genesis, physical, chemical, and biological properties of soil; relation of soils to land use and pollution; soil management relative to tillage, erosion, moisture supply, temperature, aeration, fertility, and plant nutrition. Introduction to fertilizer chemistry and use. Prereq: Chemistry 130 or equivalent. 3 hours and 1 lab. F

230 Introduction to Crop Science (3) Fundamentals of structure, classification, yield and reproduction of higher plants and use of plant products basic to plant science. Principles and methods of growing several of the world's important agronomic, fruit and vegetable crops, detailing their origin and cultural requirements. 2 hours lecture and one 2 hour lab. Prereq: Botany 110, 120 or Biology 110, 120. F

292 Soil Morphology (1) Intensive course involving describing, classifying and interpreting soils in preparation for regional and national soil judging contests. Prereq: 210 and consent of instructor. May be repeated. Maximum 4 hours. 1 hour and 1 lab. F, Sp

311 Soil Fertility (3) Influence of soil properties on plant nutrient availability and uptake. Principles of fertilizer use and their reaction in soils. Prereq: 210, 2 hours and 1 lab. Sp

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.

331 Field and Forage Crops (3) Agronomic principles of crop production and management. Crop improvement, crop systems, tillage, fertilization, pest management, harvest and utilization of major field and forage crops. Prereq: 210 or 230. 2 hours and 1 lab. Sp
and selected policy areas. (Same as Russian and East European Studies 459.) Writing-emphasis courses: at least one in-class essay examination and 3000 words of writing outside the classroom.

450 Revolution (3) Characteristics, theories, and consequences of revolution with particular focus on left-wing revolutions and movements.

451 Policy Making in Democracies (3) Comparative approach to theory and process of making public policies.

453 Contemporary Middle East Politics (3) Governments and movements in the Middle East, their characteristics, bases, and interrelationships.

459 Soviet Foreign Policy (3) Soviet international behavior since World War II, and selected problems of Soviet foreign policy post World War II. (Same as Russian and East European Studies 469.) Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

470 International Law (3) Nature and development of international law and compliance with it. Particular attention to function of international law in the context of international conflict.

475 Ancient and Medieval Political Thought (3) Major western political thinkers from Socrates to Marx.

476 Modern Political Thought (3) Major western political thinkers from Machiavelli to Marx.

478-488 Senior Honors Thesis and Seminar (3,3) Required of honors majors; admission with consent of department.

491 Foreign Study (1-15) Prereq: Consent of Department. May be repeated. Maximum 15 hours.

492 Off-Campus Study (1-15) Prereq: Consent of Department. May be repeated. Maximum 15 hours.

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

494 Internship (1-6) Prereq: Consent of department. May be repeated. Maximum of 6 hours. S/N/C only.

PORTUGUESE (811)

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

211-212 Intermediate Portuguese (3,3) Studies reading, writing, listening, and speaking of Portuguese to prepare for upper division courses in the language. Must be taken in sequence. Language Laboratory required.

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.

311 Aspects of Luso-Brazilian Literature (3) Luso-Brazilian literature, with emphasis on contemporary works. Genres may vary. Prereq: 212 or equivalent. (Same as Latin American Studies 311.)

323 Conversation and Composition (3) Development of speaking, listening, and writing skills in Portuguese; some review of grammar. Prereq: 212 or 350 to equivalent.

431-432 Directed Readings in Brazilian and Portuguese Literature (3,3) May be repeated with consent of instructor. (Same as Latin American Studies 431-432.)

491 Foreign Study (1-15)

PSYCHOLOGY (830)

110 General Psychology (3) Introduction to primary approaches to the study of human behavior and experience.

117 Honors: General Psychology (3) Enriched introduction with extra readings. Prereq: Consent of instructor.

210 Biological Basis of Behavior (3) Survey of theories and research concerning the role of genetic factors.

nerve 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 individuals and their 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 nonhuman organisms. 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 in deviant and maladaptive behavior; neuropsychiatric and psychological reactions. Controversial 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 Sociobiology (3) Basic concepts in the evolutionary approach to behavior, including applications to psychology, the social sciences, and the arts. (Same as Zoology 370.)

382 Contemporary Topics in Psychology (3) Current issue or problem, such as architectural psychology, impact of technology, artificial intelligence, or stereotypes. Different topic each semester. Prereq: 110 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, logic of decision models, decision, and interpretation of results; parametric and non-parametric tests. Prereq: Mathematics 110. Not open to students with credit in Mathematics 115, Statistics 201, or equivalent.

395 Methods of Research in Psychology (3) Fundamental methodology: design, conduct, and interpretation of research, including systematic observation, experiments, quasi-experiments, and program evaluations. Focus on both laboratory and natural settings. Prereq: 110 or equivalent, 210 or 220, or Statistics 201 or Mathematics 115, or equivalent, F, Sp

396 Laboratory in Psychology (2-3) Introduction to techniques used in the laboratory to study different topics in psychology, such as perception, memory, learning, and social behavior. Supervised experience in the use of laboratory techniques, collection and interpretation of data. Different topic each semester. Prereq: 110 or equivalent, 210, 220, 355, 395. May be repeated. Maximum 9 hours. 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 and 355 or Statistics 201 or Mathematics 115 or equivalent, or consent of instructor. May be repeated. Maximum 12 hours in 399, 499, 491, 492, and 493 combined may be applied toward the major.


409 Group Facilitation (3) Study of theory and technique through supervised experience in small groups. Prereq: 399 and consent of instructor. May be repeated. Maximum 6 hours.


420 History and Systems of Psychology (3) History of psychological thought. Classical approaches and recent developments. Prereq: 110, 210, 220 and three upper division courses in Psychology. F, Sp

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 environment. Applications of psychological treatment in medical illness. Prereq: 110 or equivalent, 210.

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: 360. (Same as Management 440.)

445 Measurement and Testing (3) Theory of test construction and psychological correlates of behavior. Biological basis of emotion, learning, and memory. Prereq: 110 or equivalent, 210, and one year of Biology or Zoology introductory sequences or equivalents. F, Sp

469 Laboratory in Physiological Psychology (3) Laboratory studies of nervous system and physiological correlates of behavior. Coreq: 461.

470 Theories of Personality (3) Major theories of human personality and their development. Prereq: 220 and 300 or 330. F, Sp

480 Theories of Learning (3) Classical and current approaches to learning and cognition. Prereq: 310.

482 Topics in Psychology (3) Intensive analysis of special topics, such as Motor-American Psychology or evaluation of programs in the community. Prereq: 210 or 220 and at least 6 credit hours in 300 level courses. Recommended: 385, 395. May be repeated. Maximum of 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, 499, 491, 492, and 493 combined may be applied toward the major.

491 Foreign Study (1-15) Prereq: Consent of instructor. May be repeated. Maximum 12 hours in 399, 499, 491, 492, and 493 combined may be applied toward the major.

492 Off-Campus Study (1-15) Prereq: Consent of instructor. May be repeated. Maximum 12 hours in 399, 499, 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, 499, 491, 492, and 493 combined may be applied toward the major.

494 Internship (1-6) Prereq: Consent of department. May be repeated. Maximum of 6 hours. S/N/C only.

PUBLIC HEALTH (839)

300 Introduction to Public Health (3) Aspects of public health including discussion of contemporary and controversial health issues.
230 Communicable and Noncommunicable Diseases (3) Modern concepts of diseases; etiology of common communicable and chronic disease problems including prevention and control. Prereq: 1 year of biological science or consent of instructor. F

310 Environmental Management and Control (3) Contemporary principles of control of disease-producing agents in our environment. Emphasizes concepts for effective application of control principles to vocational endeavors. Prereq: Math 103. Each 4 clock hours of work. For recreation majors only. S/NC only. Prereq: Consent of instructor. F

400 Consumer Health (3) (Same as Health 400.)

410 Health in the Work Environment (3) Fundamental activities involved in field of industrial health aimed at reducing health problems for employees. Emphasis 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

480 Special Topics (3) Instructional or research topics to be assigned. Prereq: Consent of instructor. May be repeated under different topic. Maximum 6 hours.

493 Directed Independent Study (1-3) Individual study of selected area of recreation management. Prereq: Consent of instructor. May be repeated. Maximum 6 hours. E

RECREATION AND LEISURE STUDIES (853)

110 Foundations for Leisure Studies and Services (3) F Focuses on understanding concepts, principles, and practices relevant to providing leisure service including philosophy of recreation, history, planning, organizational, 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 roles of recreation leadership. F, Sp

250 Specialized Study in Leisure Education (1-3) Focus on developing positive attitudes toward leisure. Contribution of leisure to mental 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 45 clock hours of work. For recreation students only. S/NC only. Prereq: Permission of instructor. E

310 Leisure Program Development and Evaluation (3) Essential elements and basic principles involved in organizing, developing programming, economics, leadership, and a survey of leisure services organizations and occupational opportunities. F, Sp

320 Therapeutic Recreation and Special Populations (3) Principles, concepts, historical development of recreation among aged, physically challenged, and mentally ill persons. Prereq: 310. S/NC only. Prereq: Consent of instructor. F

390 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. For recreation majors only. S/NC only. Prereq: 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 and sports related facilities and settings. Cost tracking, inventory systems, specialized maintenance techniques, safety guidelines, maintenance management programs and systems. Prereq: 110; 310 or consent of instructor. F, Sp

420 Principles of Therapeutic Recreation (3) Principles and practices in therapeutic recreation including activity analysis, activity and program selection adapta-

RELIGIOUS STUDIES (863)

101 World Religions in History (3) Introduction to religion in culture and society, including examination of religious traditions in China, India, and the Mediterranean world. Writing-emphasis course.

102 The Comparison of World Religions (3) Introduc-
tion to religion in culture and society, focusing on cross-
cultural interpretation and the treatment of common problems and themes within religious traditions. Writing-emphasis course.

232 Varieties of Religious Community (3) How differ-
ent forms of religious communities (cults, tribes, sects, monastic orders, denominations, familial, etc.) have sought to reject, reinforce, transform, ignore, or domi-
nate their culture and society. (Same as Sociology 232.)

235 Issues in Religious Studies (1-3) Introduction to the study of religion through selected themes, problems, controversies, or contemporary issues. Variable content. May be repeated. Maximum 6 hours.

300 Ways of Understanding Religion (3) Sources and methods used in the study of religion and religions: analysis of approaches to the study of religion. Writing-emphasis course.

301 Religious Myth, Symbol, and Ritual (3) Distinctive modes of religious expression and analysis of theoreti-
cal approaches appropriate to their particular social and cultural functions in religions.

302 Anthropology of Religion (3) Religious systems selected non-literate peoples. Role of religion in their social and cultural systems. (Same as Anthropology 302.)

322 Christian Thought (3) Principal forms of Christian thought and traditions through the interpretation of representative thinkers and movements from Augustine of Hippo to Immanuel Kant. Writing-emphasis course.

323 Judaism (3) Comprehensive introduction to the historic traditions, culture, and religious institutions of Judaism, and interactions with modern culture. Writing-emphasis course.

324 Islam (3) Comprehensive introduction to the origin and early history of Islam, rapid spread as a missionary religion, development of theology and culture, and interactions with modern culture. Writing-emphasis course.

325 Topics in Religious Studies (3) Selected topics in the study of religions, their action-guides for individuals and institutions, their application to persons and social problems.

344 Professional Responsibility (3) (Same as Phi-
losophy 344.)

345 Medical Ethics (3) (Same as Philosophy 345.)

351 Introduction to Religion in the United States (3) Anthropological profile of religion in the United States, organized around selected focal themes or problems.

352 African-American Religious Thought (3) Historical and critical examination of the 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 topics in the study of religions, their action-guides for individuals and institutions, their application to persons and social problems.

355 Religion and Culture in the United States (3) Anthropological profile of religion in the United States, organized around selected focal themes or problems.

365 Religion and Culture in the United States (3) Anthropological profile of religion in the United States, organized around selected focal themes or problems.

370 Philosophy of Religion (3) (Same as Philosophy 370.)

371 Eastern Religions and Western Thought (3) Comparative study of selected movements, thinkers, and institutions of religious traditions, Asian and Western, Writing-emphasis course.

373 African Religions (3) Religions of the indigenous peoples of Africa, including how myths, rites, and symbols and certain cultural and political movements in

430 Organization and Administration of Leisure (3) Principles of administration applied to provi-
dion of leisure services offered by public, private and/or commercial enterprises. Organizational structures, personnel management, recreation and leisure services, budgeting, and marketing. Prereq: 310 or consent of instructor. F, Su

440 Dimensions of Private and Commercial Recrea-
tion Businesses (3) Nature and function of recreation in private, commercial, and professional organizations. Development and management of commercial goods and services offered in leisure market, factors influencing participation, management and control. Emphasis in commercial recreation and tourism. Prereq: 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. Em-
phasis on supervisory and administrative procedures. Prereq: 290, 390, senior standing. Satisfactory/No Credit only. E
Africa have been and are being informed by religious sensibilities. (Same as Anthropology 373 and Afro-American Studies 373.) Writing-emphasis course.

374 Philosophy and Religion in India (3) Survey of the development of the major non-Buddhist themes of philosophical and religious thought in India. (Same as Philosophy 374.) Writing-emphasis course.

375 Buddhist Philosophy and Religion (3) Survey of the origins of Buddhism in India and further development of Buddhist philosophy and religion in India, China, Korea, Japan, the countries of Southeast Asia, and beyond. Writing-emphasis course. (Same as Philosophy 376.)

379 Religion and Philosophy in China (3) Traditional thought and religion of China in its cultural setting as basis for understanding modern China. (Same as Philosophy 379.) Writing-emphasis course.

380 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 to sacred. Writing-emphasis course.

384 Zen Buddhism (3) Historical, philosophical, and meditational aspects of Zen. Special emphasis on motifs of emptiness, no-mind, and enlightenment and on practice of meditation and the use of the koan. Recommended Prereq: One or more of the following: 376, 379, 380.

388 Literature of the English Bible (3) (Same as English 388.)

390 Topics in Religious Studies (3) Selected figures, themes and issues. Variable content. May be repeated. Maximum 6 hours.

411 Modern Religious Philosophies (3) Religious implications of major Western thinkers and movements from Nicolas of Cusa to the nineteenth century German Idealists. (Same as Philosophy 411.)

412 Classical Indian Systems of Philosophy: The Moksha Tradition (3) Selected writings and philosophical problems of the Nyaya, Yoga, Vedanta, Buddhism, or 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 each person compared with equivalent concepts in the other. Advanced study of the Gospels and Epistles of Paul, involving extensive independent research.

421-422 Elementary Sanskrit I, Elementary Sanskrit II (3,3) 421-Introduction to the grammar of classical Sanskrit. 422-Introduction to the reading of epic and classical Sanskrit texts. Prereq: 421 or consent of instructor.

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.)

462-463 Intermediate Sanskrit I/Intermediate Sanskrit II (3,3) 462-Advanced grammatical constructions and reading of epic and classical religious and narrative texts (e.g., Bhagavad Gita, Mahabharata, Ramayana, Katha Upanisad). Prereq: 425 or consent of instructor. 463-Continued reading of classical religious and narrative texts. Introduction to classical Sanskrit poetry (e.g., Kalidasa's Shakuntala or Meghaduta). Prereq: 462 or consent of instructor.

469 Readings in Selected Languages Related to Religious Studies (3) Prereq: Consent of instructor. May be repeated. Maximum 6 hours.

490 Readings and Research in Religious Studies (3) Prereq: Consent of instructor. May be repeated. Maximum 6 hours.

491 Foreign Study (1-15)

492 Off-Campus Study (1-115)

493 Independent Study (1-115)

499 Prosseminar in Religious Studies (3) For advanced students in Religious Studies; required for majors. Selected topics, e.g., nature and function of myth in religious 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

101 Apparel Selection and Construction (3) Garment selection decisions based upon knowledge of construction techniques. Not available for credit for department majors. Alt. F.

110 Introduction to Retailing (3) Study of the retailing industry based upon knowledge of its origin, history, function, employment opportunities, extent and importance to the economy. F.

120 Textiles for the Consumer (3) Study of fibers, fabrics structures and finishes of textiles related to selection, use, and care by the retail consumer. F.

230 Product Quality Evaluation (3) Price/quality relationships in hard and soft goods; linkages between raw materials, manufacturing, distribution, and retail and contributions to consumer goods. F.

310 Principles and Theories of Buying (3) Analysis of theoretical perspectives that formulate and affect buying principles and processes for the retail markets; application of the theories in retail practice; special emphasis on buying processes associated with procuring products for the consumer. F.

330 Quantitative Managerial Merchandising (3) In-depth analysis and practical application of the principles, techniques, and philosophies guiding the merchandising plan, inventory control, and alternative uses for quantitative merchandising; extensive use of computer programs designed to simulate actual buying situations. Prereq: 310. Sp.

340 Social Psychology of Clothing (3) Cultural and functional aspects of apparel; use of clothing and appearance cues as stimuli for understanding ourselves and world around us. Prereq: Soc 100. F.

345 Fashion in History (3) Structure of fashion industry; relation of lifestyles to apparel styles in selected periods of eastern civilization; women's apparel associated with origin, adoption, and abandonment.

350 Consumers in the Market (3) Consumer and family decision making in the domestic and international marketplaces; consumerism, consumer issues, advocacy, demographic issues; consumer policies in information, protection, and market choice; consumer choice in retail and other markets; major consumption expenditures, public goods, financial and risk management. Prereq: Econ 201. E.

390 Introduction to Internship (1) Interviews, placement, and planning for internship. Prereq: Approved application for internship.

410 Retail Management (3) Retail sector of economy from management perspective; decision making in retail operations; promotion, pricing, financial planning and control, computer application, product mix-strategy. Prereq: 2 semesters Marketing. Sp.

411 Entrepreneurship and Small Business Management (3) Concepts of entrepreneurship within single ownership and other business organizations; risk-taking and risk management; management of a small business; current issues and problems. Prereq: 310, MKT 310. Sp.

421 Direct Retail Selling (3) General principles of selling goods at the retail level; analysis of customer types and personalities; psychology of selling, communication styles, development of the sales personality; nontraditional methods of direct selling using various media such as catalog and electronic shopping techniques. Sp.

425 Retail Promotion (3) Advertising and special purpose media used to promote retail merchandise; evaluation of retail sales promotion activities. Sp.

450 Consumer and Retail Economics (3) Consumer choice models, consumer demand analysis, household behavior, economics of information, leisure, and product differentiation, brand and label identification, structure of the retail complex, economic analysis of the retail organization; domestic and international implications. Prereq: 350, MKT 310. Sp.

490 Methods in Internship (3) Investigation of training systems and business organization, analyses of jobs and evaluation of internship. Prereq: 390; Coreq: 492. F.

492 Internship (1-15) Retail and Consumer Sciences (9) Off-campus cooperative program with business establishments which merchandise or manufacture textiles and/or apparel. Prereq: 390; Coreq: 490. F. Enrollment limited. Only.

493 Directed Study (1-3) Individual problems for junior and senior students with special interests in retail and consumer sciences. Prereq: Junior or Senior standing and consent of the instructor. E.

495 Special Topics (3) Topics in retail and consumer sciences. May be repeated. Maximum 6 hours. Prereq: Junior or Senior standing and consent of the instructor. E.

497-498 Honors: Retail and Consumer Sciences (3) Individual problems for Junior and Senior students showing special ability and interest in retail and consumer sciences. Prereq: Recommendation of Department Head. E.

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.)

480 Diffusion of Agricultural Technology (3) Diffusion and communication processes whereby new technologies spread from scientists to change agents and then to farmers. Innovation-decision process; communication behavior, mass media, roles of professional change agents, group leadership and the consequences of technological change. Prereq: 380 or consent of instructor. Sp. (Same as Sociology 480.)

RUSSIAN (886)

101-102 Elementary Russian (4,4) Must be taken in sequence.

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. No foreign language credit. Writing-emphasis courses: at least one in-class essay examination and 3000 words of writing outside the classroom.

225 Russian Philosophical and Theological Thought (3) Development of philosophical thought in Russia from the Middle Ages to the Revolution. Emphasis on expression of this thought in Russian literature and literary criticism. No knowledge of Russian required.

301-302 Introduction to Russian Literature (3,3) Russian poetry, short stories, and short novels. Prereq: 202. 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 202.

321 Works of Dostoevsky in English Translation (3) Crime and Punishment, Brothers Karamazov, and other works. Writing-emphasis course; at least one in-class essay examination and 3000 words of writing outside the classroom. (Same as Russian and East European Studies 321.)
410 Selected Topics in Russian and East European Studies (3) Topics vary and are announced in advance. Student suggestions for topics are welcome. No foreign language credit. May be repeated once. (Same as Russian and East European Studies 326.)

371-372 Background and Main Currents of Russian Culture (In English) (3,3) Interdisciplinary approach to the appreciation of the language, religion, literature, art, music, history, geography, and social problems of Russia. No knowledge of Russian required. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

401-402 Advanced Grammar, Conversation, and Composition (3,3) Prereq: 312 or equivalent. (Same as Russian and East European Studies 401-402.)

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

426 Introduction to Historical and Comparative Linguistics (3) (Same as German 426, French 426, Spanish 426 and Linguistics 426.)

451-452 Senior Seminar (3,3) For majors in Russian; minors admitted at the discretion of the instructor. Intensive study of language, literary style, and literary criticism based on selected major novels. (Same as Russian and East European Studies 451-452.)

491 Foreign Study (1-15) Prereq: Consent of instructor. (Same as Russian and East European Studies 491-492.)

RUSSIAN AND EAST EUROPEAN STUDIES (887)

301-302 Introduction to Russian Literature (3,3) (Same as Russian 301-302.)

321 Works of Dostoevsky in English Translation (3) (Same as Russian 321.)

322 Works of Tolstoy in English Translation (3) (Same as Russian 322.)

326 Special Topics in Russian Literature in English Translation (3) (Same as Russian 326.)

330-341 History of Russia (3,3) (Same as History 340-341.)

375 Geography of the Soviet Union (3,3) (Same as Geography 375.)

393 Marxism (3) (Same as Philosophy 393.)

401-402 Advanced Russian Grammar, Conversation and Composition (3,3) (Same as Russian 401-402.)

410 Selected Topics in Russian and East European Studies (3) Interdisciplinary seminar on a selected topic using a comparative approach. Requires research using Russian language sources, regardless of country, and a paper of 25-30 pages. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

451-452 Senior Seminar (3,3) (Same as Russian 451-452)

459 Government and Politics of the Soviet Union (3) (Same as Political Science 459.)

469 Soviet Foreign Policy (3) (Same as Political Science 469.)

SAFETY (890)

400 Directed Independent Study (1-3) Individual identification and study of safety or safety education problem issue. Specific proposal must be made to instructor before registration. May be repeated. Maximum: 12 hours. Prereq: Consent of instructor.

441 Driver and Traffic Safety Education (3) Preparation of traffic safety instructors for schools, colleges, industry and commercial agencies. Each matriculant required to teach at least two non-drivers to drive. Valid drivers license required. 3 hours lecture and 2 hours lab.

442 Advanced Driver and Traffic Safety Education (3) Teaching driver education through use of simulation, multimedia, and multiple-car driving range. Emphasis placed on teaching skills and supervision. 2 hours and 2 labs.

443 Sports and Recreational Safety (3) Accident prevention and injury control in sports activities; philosophy of sports safety; human environmental factors and interrelationships of sports injury and control; risk-taking and decision solution strategies; and contributions of sports medicine to safety. 3 hours and 2 labs. Sp

452 General Safety (3) Principles, practices, and procedures in general safety. Safety problems in school, traffic, recreation, industry, home, and other public areas. F, Su

470 Special Topics (1-3) Study in selected disciplinary or professional areas of safety. May be repeated. Maximum 12 hours.

SOCIAL WORK (905)

200 Introduction to Social Work (3) Emergence of the social work profession; professional mission; knowledge, skills, and values; client groups; helping services; career patterns; practice methods. Designed to assist students to consider their ability for careers in social work.

250 Social Welfare (3) Development, structure and function of the social welfare institution. Analysis of social welfare programs and impact of the institution on society.


314 Human Behavior and the Social Environment (3) Interrelationships of biological, social, cultural, environmental, and psychological factors in human behavior. Person-environment over the life span with special attention to diversity, impact of racism, sexism, and other sociocultural factors. Integration of knowledge into a social work practice perspective. Prereq: Initial progression.


412 Social Work Practice III (3) Generalist practice with emphasis on groups and communities, including treatment theories, techniques, and issues. Prereq: Full progression. Coreq: 418 and 480.


460 Integrative Seminar (2) Social work content for entry-level professional practice and current issues influencing the profession. Includes development of a portfolio reflecting BSW competencies. Prereq: Full progression. Coreq: 481.


491 Foreign Study (1-15) Prereq: Consent of instructor.

492 Off-Campus Study (1-15) Prereq: Consent of instructor.

493 Independent Study (1-15) Prereq: Consent of instructor.

SOCIOLY (915)

100 General Sociology (3) Major concepts and theoretical approaches of sociology with emphasis on culture, socialization, organization, and social stratification.

110 Social Problems and Social Change (3) Increasingly acute and intense problems such as alcoholism, violence, crime, inequity, lifestyle preferences, and environmental abuse within the context of social change. Assessment of control strategies. May be taken instead of 100.

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 or either 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: at least one in-class essay examination and 3000 words of writing outside the classroom.

311 Family (3) Theoretical frameworks and methodological approaches, their application in the sociological study of past 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 expected to form critical appraisals of the topics addressed.

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 interpretation. Requires written research report.

336 Elementary Social Statistics (3) Statistics used in social research; elementary descriptive techniques; measures of central tendency, dispersion; elementary statistical inference; tests of significance for parametric and non-parametric data.

340 Class Structure (3) Class structure and conflict; causes and consequences of structured social inequality. Emphasis on the United States. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

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 Afro-American Studies 343 and American Studies 343.) Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

344 Power and Society (3) Sociological analysis of the formation and application of nation state policies. Examination of who gets what, when and why. Emphasis on contrasted explanations of the control of the state and the relative autonomy of the state.
446 The Modern World System (3) Critical examination of the capitalist world-system as a social system, its coherence, boundaries, regions, member groups, cleavages, and patterns of conflict. Analysis of who gets what, why, and how in the global political economy. Writing emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom. (Same as African-American Studies 442.)

451 Criminal Justice (3) A critical assessment of the criminal justice apparatus and its components. Brief examination of both the police, with more of the emphasis on the criminal courts and institutions and programs such as the prison, probation, and parole. Analysis of their operation and impacts. Prior completion of 350 is recommended.

455 Society and Law (3) How laws and legal processes are affected by social change, the sociology of legal sanctions, relations between law and social justice. Writing emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

459 Organizational and Corporate Crime (3) Crime, and deviance committed by organizations. Case studies of corporate and organizational crime, the organizational and psychological theories of corporate crime, and organized responses to this type of crime by governmental regulatory agencies.

462 Population (3) Demographic factors and social structure; trends in fertility, mortality, population growth, migration, distribution, and composition; population policy.

464 Urban Ecology (3) The relation of humans to their urban environment with emphasis on conservation and the use of appropriate technology. (Same as Urban Studies 464.)

471 Sociolinguistics (3) (Same as English 471 and Linguistics 471.)

480 Diffusion of Agricultural Technology (3) (Same as Rural Sociology 480.)

491 Foreign Study (1-15) Prereq: Advance departmental approval of number of hours and topics. May be repeated. Maximum 15 hours.

492 Off-Campus Study (1-15) Prereq: Advance departmental approval of number of hours and topics. May be repeated. Maximum 15 hours.

493 Independent Study (1-15) Prereq: Advance departmental approval of number of hours and topics. May be repeated. Maximum 15 hours.

SPANISH (924)

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

117-118 Honors: Elementary Spanish (3,3) An introductory course for students with a special interest in Spanish. Ideal for students with knowledge of another foreign language, or for those who have had some previous (but not extensive) experience with Spanish. An enriched program with emphasis on basic skills of listening, speaking, writing, and reading. Special attention given to those skills needed for communication with Spanish speakers in real life situations. Grading scale and workload the same as regular sequence. Students with two years of high school Spanish or one year of college Spanish may be admitted in the course for credit. Courses must be taken in sequence. Students receiving a grade of A or B in 118 will receive credit for 210 transitional course. Class size limited to 15 students.

189 The Spanish Language and World Business (1) 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 Liberal Arts will provide an overview of the value of the use of Spanish language study and international cultural awareness in world business. Restricted to students majoring in the program in Language and World Business. See the Director for further information.

210 Intermediate Spanish Transition (3) A thorough study of the fundamentals of Spanish language for those who have completed two or more years of high school Spanish, whose placement test results indicate that they are not prepared for the 211-212 sequence. Special emphasis on developing communicative proficiency in Spanish. The course runs five hours per week and will not count toward the College of Liberal Arts intermediate-level foreign language requirement. For elective credit only.

211-212 Intermediate Spanish (3,3) Reading, writing, listening, and speaking of Spanish to prepare for upper division courses in the language. Must be taken in sequence. Language Laboratory required. Prereq: 111-112 or equivalent.


396-493 Advanced Intermediate Spanish (3,3) A comprehensive course in the study of the language, literature, society, and culture of Spain and the Spanish-speaking world. All work is in Spanish. The course will meet five hours per week and will count toward one year of college credit. Prereq: 212, 218 or equivalent.

323-324 Intermediate Conversation and Composition (3,3) Designed to improve proficiency in oral and written Spanish. May be repeated. Maximum 15 hours.

340 Spanish for Business (3) Contemporary Spanish language as it applies to business transactions. Understanding and compositional exercises in oral communication and elements of Spanish culture related to good business practices. Prereq: 212, 218 or equivalent.

360 Environment and Resources (3) Relationship between scarcity of natural resources and changes in societal beliefs and social structure. Topics include social and physical limits to growth and collective action problems.

363 The City (3) The revolutionary impact of cities and city life as seen from an ecological perspective. The organization of life in cities into communities, neighborhoods, and other territories. Urban planning and problems.

370 Social Psychology (3) Social psychological analysis of social behavior emphasizing its acquisition, its enactment, and its dynamic nature.

375 Gender in Society (3) Exploration of gender in society utilizing various sociological perspectives with special focus on the relationships between social structures, social roles, and gender identities. (Same as Women's Studies 375.)

380 Rural Sociology (3) (Same as Rural Sociology 380.)

400 Special Topics (3) Variable topics. Scope of subject matter determined by students and instructor with consent of department. May be repeated. Maximum 6 hours.

405 Sociology of Sport (3) Social meaning, organization, and process of sport. Prereq: 291 or consent of instructor. (Same as Physical Education 405.)

413 Formal Organization (3) Organizational models, typologies, and analysis of organizational structure. (Same as Women's Studies 413.)

419 Women in Society (3) History and organization of women's movements in the United States and major sociological theories which attempt to explain difference between women's and men's roles and experiences. Required of all majors. Prereq: 212, 218 or equivalent.

421 Phonetics (3) Prereq: 212, 218 or equivalent.

422 Advanced Grammar (3) Finer points of grammatical structures. Required of all majors. Native speakers must receive permission from the instructor to take this course. Prereq: 212, 218 or equivalent.

423-424 Advanced Conversation and Composition (3,3) Advanced conversational and written skills in Spanish. (Same as French 423, German 423, Russian 423 and Linguistics 423.)

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

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 achievements of the Spanish people from the origins of their civilization until today. Prereq: 311, 312 or equivalent. Writing emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

432 Cervantes (3) Emphasis upon selections from Don Quixote and study of the shorter Novelas ejemplares. Prereq: 311, 312 or equivalent.

433 Masterpieces of Spanish Literature (3) Selections from both the Golden Age and the modern period of works of all genres. Prereq: 311, 312 or equivalent.


450 20th Century Hispanic Theatre (3) Emphasis on major 20th century Spanish American dramatists. Prereq: 311, 312 or equivalent. (Same as Latin American Studies 450.)

459 Captive 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 involve those who specialize in Hispanic Stud-
ies. Prereq: 311, 312 or equivalent. Writing-emphasis
course: at least one in-class essay examination and
3000 words of writing outside the classroom.

460 Capstone Tutorial in Spanish (1) Independent
study project supervised closely by a faculty member.
Prereq: Completion of Spanish 393-394, 311-312 or
equivalent. Writing-emphasis course: at least one
in-class essay examination and 3000 words of writing
outside the classroom.

471 Latin American Civilization (3) Latin America's
diverse heritage and major social and political institu-
tions. Prereq: 311, 312 or equivalent. (Same as Latin
American Studies 471.) Writing-emphasis course: at
least one in-class essay examination and 3000 words
of writing outside the classroom.

472 Masterpieces of Spanish American Literature
(3) Selected works by major Spanish American writers
such as Dario, Paz, Borges, Fuentes and others. Gen-
ter and periods may vary. Prereq: 311, 312 or equiva-
lent. (Same as Latin American Studies 472.)

473-474 Survey of Spanish American Literature
(3,3) Historical survey from the conquest to late 19th
century. 474-Major literary movements, writers and works
of the 20th century. Prereq: 311, 312 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:
indigenism, Blasian, race, women writers, the role of
the writer in Latin American society. Prereq: 311, 312 or
equivalent. (Same as Latin American Studies 479.)

481 Foreign Study (1-15)

493 Independent Study (1-15)

SPECIAL EDUCATION (933)

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

320 Special Education Strategies (3) Introduction to
basic special education procedures, including formal
and informal assessment, planning, development of
individual Education Plans, applied behavioral analysis,
appropriate medical procedures, and effective instruc-
tional strategies. Prereq: 310, Admission to Teacher
Education Program.

331 Articulation Disorders (3) Prereq: Admission to
Teacher Education Program (Same as Audiology and
Speech Pathology 331.)

371 Audiology I (3) (Same as Audiology and Speech
Pathology 371.)

404 Appraisal of Speech and Language Disorders
(3) (Same as Audiology and Speech Pathology 404.)

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

415 Language Development for the Hearing Im-
paired I (3) Language problems of hearing impaired
children: characteristics and prevention. Prereq: Consent
of instructor. May be repeated for credit. Sp

416 Language Development for the Hearing Im-
paired II (3) Development and remedial systems of
teaching language to hearing impaired children. Con-
text of language and language development. Prereq: 415.

419 Speech Development of Hearing Impaired (4)
Theories of speech development, approaches in train-
ing perception and production of speech, and aural
habilitation. Practicum experiences.

420 Psychology and Education of Students with
Mild Disabilities (6) Nature and characteristics of per-
sons with mild handicaps and the educational strategies
appropriate for these persons. Prereq: 310, 320, Educa-
tional Curriculum and Instruction 422 and Admission to
Teacher Education Program. Coreq: 421.

421 Field Experience in Modified Programs (3) Prac-
ticing in teaching in modified programs; planning,
developing, implementing, and evaluating instruction.
Prereq: 316, 320, Educational Curriculum and Instruc-
tion 422 and Admission to Teacher Education Program;
Coreq: 420. Satisfactory/No Credit only. F

423 Communication Processes for the Hearing Impa-
pired (3) Expressive and receptive vocabulary develop-
ment in sign communication. Fingerspelling and edu-
cational-augmented American Sign Language.

424 Nature of Hearing Impairments (3) Anatomy and
physiology of hearing; nature and causes of hearing
loss; methods and instrumentation for assessment of
hearing level; interpretation of audiologic services to
medical and other rehabilitative disciplines.

425 Introduction to the Psychology and Education of
the Hearing Impaired (3) Primarily for those planning
to teach the hearing impaired. Research related to
psychology, social adjustment, communication method-
ologies, and educational-augmented American Sign
Language.

427 Social and Psychological Characteristics of
People with Mental Retardation (3) Characteristics, cri-
ces of the internship program. Must be completed the
year after admission, the last semester of which must
be the year of graduation. Prereq: 310, 320, Educational
Education Program. Coreq: 420, 421.

431 Field Experience in Comprehensive Programs
(3) On-site teaching experience with moderately and
severely handicapped children and youth. Prereq: 310,
320, Educational Curriculum and Instruction 422 and Ad-
mision to Teacher Education Program. Coreq: 420.
Satisfactory/No Credit only. Sp

432-434 Clinical Practice in Speech Pathology
(1-4, 1-4) (Same as Audiology and Speech Pathology
432-434.)

440 Voice Disorders (3) (Same as Audiology and
Speech Pathology 440.)

454 Education of the Gifted and talented Children
(3) Psychometric and behavioral studies of giftedness.
Analysis of past and present school practices in refer-
ce to curriculum implementation and individualized
programming. Prereq: Admission to Teacher Education
Program.

458 Speech and Language Basis of Learning Dis-
abilities in the Classroom (3) Normal communication
development; understanding of speech and language
impairments for the classroom teacher. Prereq: 311, 312 or
equivalent. Writing-emphasis course: at least one in-
class essay examination and 3000 words of writing
outside the classroom.

464 Educational Psychology (3) General
characteristics and educational needs of exceptional
students. Implications of developmental variations for
functioning as adults. Enrollment limited to non-educa-
tion majors.

471 Internship I: Special Education (3-15) Testing
methods and theories of teaching. Internship is com-
pleted in local public schools. Application for internship
should be made upon admission to the Teacher Educa-
tion Program. Prereq: 410 and admission to Teacher
Education Program. Satisfactory/No Credit only. F

473 Audiology II (3) (Same as Audiology and Speech
Pathology 473.)

482 Speech and Language Services in the Schools
(3) Organization and implementation of speech and
language programs. Emphasis on the IEP process as it
affects assessment, case-selection, and programming for
students ages 4-21. Procedures and materials, group
intervention, and classroom consultation. Prereq: Ad-
mision to Teacher Education Program.

483 Clinical Practice in Communication Disorders
in Schools (3) Supervised practicums with children with
communication disorders. Prereq: 482 and Audiology
and Speech Pathology 433, 434 (80-100 clinical contact
hours) and admission to Teacher Education Program.

484 Internship with Hearing Impaired Children (6)
Supervised practicum with preschool, primary, middle,
and residential students. Prereq: Admission to Teacher
Education Program.

485 Student Teaching in Special Education (3-10)
Intended for students in the four year program or equiva-
alent. Not to be substituted for internship (Educational
Curriculum and Instruction 471, 472 or Special Educa-
tion 471.) Prereq: Admission to Teacher Education Pro-
gram, permission of Mentoring Team, and Educational
Curriculum and Instruction 203 (1). Satisfactory/No Credit
only.

493 Directed Independent Study (1-3) Tutorial and
Specialized area. Prereq: Consent of instructor. May be
repeated. Maximum 6 hours. S/C or letter grade.

494 Aural Habilitation/Rehabilitation of the Hearing
Impaired (3) (Same as Audiology and Speech Pathol-
yogy 494.)

SPEECH COMMUNICATION (943)

100 Introduction to Speech Communication (3) Fun-
damental theories and practices with particular refer-
ce to interpersonal, intergroup, organization, and pub-
lic communication.

200 Developing Speech Confidence (1) Principles
and techniques for coping with apprehension about
speech, hearing, and thinking. Recommended for students who are concurrently enrolled in 200 level speech courses and
desire additional work in dealing with their anxiety about
speech.

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.)

240 Business and Professional Speaking (3) Basic
principles of oral communication within organizations,
including such topics as organizational communication
theory, group problem solving, formal presentations,
and interviewing.

270 Argumentation and Debate (3) Reasoned deci-
dion-making with emphasis on analysis, evidence, rea-
tion, 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, play
and drama. Writing assignment: at least one in-class
essay examination and 3000 words of writing outside
the classroom.

295 Communication Research Methods (3) Survey
of contemporary methods used for research in Speech
Communication. Emphasis on interpreting and evaluat-
ing communication research reports.

300 Nonverbal Communication (3) Exploration of
nonverbal communication from human communication
perspective; origins and research, usage and coding of
nonverbal behavior, research strategies, and theoretical
approaches.

310 Persuasion (3) Methods which contribute to effec-
tive and ineffective persuasion. Topics include credibi-
ity, message construction, receiver variables.

320 Interpersonal Communication Processes (3)
Social dimensions of interpersonal communication and
relationships. Prereq: Speech Communication/Sociology
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 sci-
ence approach to theorizing about communication

360 Topics in Communication and Society (3) Con-
tent varies. Studies in social function of such communi-
cation forms as posters, speeches, songs, plays, dem-
ocratic rhetoric. May be repeated with consent of depart-
ment. Maximum 6 hours.

370 Evidence and Argumentation (3) Conspectus
of evidence in public controversies, uses and sources of
evidence, and conditions affecting credibility.

380 Advanced Oral Interpretation (3) Individual
and group performances of prose literature and poetry.
493 Independent Study (2-6) Faculty directed reading and investigation of specified topic in probability or statistics culminating in a written report. Prereq: Two courses in statistics and permission of the Chairperson of the Statistics Department Undergraduate Affairs Committee. Letter grade or Satisfactory/No credit. May be repeated. Maximum 6 hours.

497 Honors Thesis (6) Undergraduate thesis culminating in a written report and oral defense. Prereq: Invitation of the Department Undergraduate Affairs Committee. Satisfactory/No credit only.

TECHNOLOGICAL AND ADULT EDUCATION (967)

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 auxillary view drawing. Sketching, dimensioning, board work, and CAD. F

163 Power and Energy Systems (3) Automotive technology and internal combustion engines. Includes various fuel injection systems, emission controls, and transmission of power. Engine tune up and overhaul and small engine maintenance and repair is stressed through experimental and applied laboratory experiences. F

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

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

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

261 Architectural Graphics (3) Graphication and architecture. Principles of construction, working drawing for a residential construction, electronic and/or computer techniques. Prereq: 161 or consent of instructor. Sp

263 Basic Electricity/Electronics (3) Operation and characteristics of electrical systems and devices; includes general DC/AC theory and application, use of electronic measuring instruments, circuit analysis, introduction to semi-conductors and various laboratory experiences that involve the function of different types of circuits. Prereq: 163 or consent of instructor. Sp

265 Construction Technology (3) Residential construction including site selection, foundations, framing, roofing, interior, and exterior finishes. Prereq: 165 or consent of instructor. Sp

266 Machine Tool Processes (3) Function, care, set-up, operation and theory of basic machine tools. Prereq: 166 or consent of instructor. Sp

336 Micro Business Applications (3) Operating and programming microcomputers. BASIC language is used and programming exercises are oriented in business applications. Prereq: Admission to Teacher Education Program. Sp
352 Practicum in Industrial Education (1-3) Updating and upgrading experiences in non-traditional settings for technical teachers: May be repeated. Maximum of 6 hours. Satisfactory/No Credit only. E

354 Job Analysis Techniques and Curriculum Development (3) Instructional materials development utilizing the techniques of job analysis. F

355 Microcomputer Applications in Technology (3) Use and applications of microcomputers for education, business, and industry. Implications and impact of microcomputers on education and everyday living. Open lab for required hands-on experience in operations and programming. F

356 Lab Organization, Management, Maintenance, and Safety (3) Principles of classroom and laboratory organization, maintenance, safety, and management in vocational and technical laboratories. Sp

361 Graphic Reproduction Processes (3) Principles of printing, duplicating, photography, and other forms of graphic communication; includes laboratory experience in SLR camera applications, camera copy preparation, line and halftone photography, layout, stripping, platemaking, and offset presswork. F

363 Applications of Integrated Electronics (3) Electrical circuit analysis and IC applications: including amplifiers, waveforms, oscillators, and basic principles and applications of digital electronics through lecture and laboratory experiments and projects.

365 Manufacture of Wood Products (3) Design and construction of case and carcass furniture and built-ins. Emphasizes use of wood as material. Prereq: 165. Sp

366 Manufacturing Technology (3) Manufacturing system, including researching and developing products, preparing to produce, producing, marketing, and servicing products. Prereq: 165 and admission to Teacher Education Program. Sp

369 Plastic Technology (3) Characteristics and applications of thermoplastic and thermosetting materials. Plastics production equipment related product design and processing of plastics. Prereq: 165, 166. Sp

372 Job Analysis (3) Applied techniques of job analysis to determine job descriptions, training requirements, performance standards and sequence of training technical personnel. F

373 Instructional Techniques in Industrial Education (3) Application of learning theories, motivational techniques, and instructional strategies to technical and related subjects. F

374 Planning Instruction for Human Resource Development (3) Selection, design, and development of performance-based training programs. Prereq: 372 or consent of instructor.

401 Utilization of Community Resources (3) Strategies of developing linkages between vocational education and the private sector through advisory committees, councils and working partnerships. Development and the management of public relations programs. Prereq: Three years of teaching experience. A

410 Pre-Student Teaching Seminar (1) Objectives and policies of the student teaching program. Must be completed concurrently with student teaching. Prereq: Admission to Teacher Education Program. Satisfactory/No Credit only. F, Sp

413 Special Topics in Technological and Adult Education (1-3) Topics to be assigned. May be repeated. Maximum 6 hours. E

414 Individual Study in Technological and Adult Education (3) Prereq: Consent of supervising instructor with approval form filed in the office of the department head. May be repeated. Maximum 6 hours. E

415 Coordination Techniques (3) Necessary procedures, duties and responsibilities to implement, maintain, and evaluate a successful cooperative education program. Sp

420 Introduction to Adult Education (3) Breadth of adult education activities and the diversity of adult clientele, including opportunities for professional practice apart from traditional instructional settings. A

421 Adult Education Program Design and Management (3) Selection, design, and development of special application to adult training programs. Sp

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

430 Principles and Organization of Business Marketing (3) Historical background and development needs. Principles of vocationaI education in business and marketing, curriculum implications, establishing, evaluating, and improving the programs. Prereq: Admission to Teacher Education Program. F

431 Word Processing and Office Technology (3) Word processing concepts and applications, methodology for teaching word processing and microcomputers. Prereq: Advanced typewriting skill and permission of instructor. F

432 Methods and Materials in Business and Marketing Education (3) Teaching techniques, aids and evaluation in subject matter fields. Prereq: Admission to Teacher Education Program. Sp

433 Methods in Office Technology (3) Materials, methods, evaluation procedures, and recent research in typewriting, shorthand, and other office procedures. Sp

434 Methods in Accounting and Data Processing (3) Methods, materials, evaluation procedures, and recent research in accounting and data processing. Automated accounting applications. Prereq: Admission to Teacher Education Program. F

436 Supervised Occupational Experience (3-9) Practical field experience in business and marketing settings under the supervision of practitioner and departmental representative. May be repeated to a maximum of 9 credits. E

439 Areas of Marketing (3) Marketing, personnel development, operations and management as these affect the instructional leadership program in marketing education. Sp

440 Special Topics in Business and Marketing Education (1-3) Topics to be assigned. May be repeated. Maximum 6 hours. E

450 Seminar in Industrial Education (1-3) Current issues, innovations, problems, and other topics associated with technical programs. May be repeated. Maximum 6 hours. A

454 Training Aids Development (3) Study and preparation of instructional aids and non-print media commonly used by technical instructors and trainers. F

455 Performance-Based Evaluation (3) Assessing the effectiveness of training through the development of performance-based measures; evaluation of incumbent worker job performance. Sp

456 Organization and Operation of VICA/HOSA (3) Planning, organizing and implementing youth-club activities in vocational-technical programs. A

459 New Developments in Industrial Education (3) Developments, significant problems and recent trends in industrial education presented by coordinating instructor in conjunction with knowledgeable resource personnel. May be repeated. Maximum 6 hours. E

464 Methods and Mediation in Technology Education (3) Methods and media used in teaching technology education in the secondary public schools. Prereq: Admission to Teacher Education Program. F

465 Materials and Processes (3) Materials relative to specifications, testing, and methods to classify and categorize materials. Determining correct processes to match industrial product needs. Prereq: Consent of instructor.

466 Course Construction in Technology Education (3) Selection and arrangement of course content. Planning, instructional media, and instructional product selection with assignments and evaluation. Prereq: Admission to Teacher Education Program. F

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 programs. 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 training 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. F

THEATRE (976)

100 Introduction to Theatre (3) Understanding theatre: thought, philosophy, aesthetics, and production practices. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

210-211 Survey of World Drama (3,3) 210-Includes Greek, Roman, Medieval, Elizabethan, and Eastern forms of drama. 211-Covers 19th century, as well as realism through contemporary drama. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

220-221 Acting (3,3) 220-Basic Acting techniques. 221-Further exploration and development of acting techniques. Prereq: Approval of instructor. Prereq: 220. Writing-emphasis courses: at least one in-class essay examination and 3000 words of writing outside the classroom. Prereq to 221: 220.

220 Voice and Diction (3) Voice production, attention to individual speech problems.

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 instrument engineering as it relates to stage lighting and sound production. Emphasis on hands-on skills in labs. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

310-311 History of the Theatre (3,3) 310-Drama in performance with particular emphasis in theatre architecture, scene design, and acting styles Antiquity to Renaissance. 311-The European and modern theatres. 312-313 History of the American Theatre (3,3) Development of the theatre as social institution in American life. 312-From its beginnings to 1900. 313-From 1900 to the present. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

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.

340 Introduction to Costume Design (3) Development of research and rendering skills. Prereq: 248 or consent of instructor.

345 Costume Construction (3) Study and practice of skills in costume construction. Includes stitching, corseletting, millinery, and crafts. Production participation is required.

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 chiroscopie. Prereq: 100.

410 Dramatic Theory and Criticism (3) Theatre aesthetics from Aristotle to the present.
WOMEN'S STUDIES (994)

210 Images of Women in Literature: Biography and Autobiography (3) Introduction to women's journals, diaries, biographies and autobiographies. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

215 Images of Women in Literature: Fiction, Poetry, Drama (3) Introduction to the study of women through the roles and stereotypes portrayed in a variety of literary genres (fiction, poetry and drama), including works from diverse historical periods and cultures. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

220 Women in Society (3) Role played by women in various societies during different historical periods, factors which have limited women's participation in society, social scientists' assumptions about women.

230 Marriage and Family: Roles and Relationships (3) (Same as Child and Family Studies 220.)

310 Emergence of the Modern American Woman (3) Role of women in the development of American civiliza-

320 Women and Religion (3) (Same as Religious Studies 320.)

324 Women in French Culture (3) (Same as French 324.) Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

330 Women in Music (3) (Same as Music History 330.) Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

332 Women in American Literature (3) (Same as French 332.) Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

340 Women in European History (3) (Same as History 340.) Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

343 Literary Portraits of French Women (3) (Same as French 343.)

344 Psychology of Gender (3) (Same as Psychology 344.) Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

350 Women in American History (3) (Same as History 350.) Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

366 Rhetoric of the Women's Rights Movement (3) (Same as Speech 366.) Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

383 Animal Development and Embryology (3) (Same as Classics 383.) Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

400 Topics in Women's Studies (3) Content varies. May be repeated.

410 Sex Role Development: Implications for Educa-

422 Women Writers in England (3) (Same as English 322.)

425 Women's Health (3) (Same as Health 425.)

432 Women in European History (3) (Same as History 432.) Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

433 Literary Portraits of French Women (3) (Same as French 433.)

434 Psychology of Gender (3) (Same as Psychology 434.) Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

450 Comparative Invertebrate Biology (4) Origins, phylogeny and functional anatomy of invertebrates with emphasis on diversity of life forms and adaptations to specific local environments. 5 hours and 3 lab.

459 Comparative Animal Behavior Laboratory (3) Introduction to observational and experimental research in ethology. Coreq: 450. (Same as Psychology 459.)

460 Evolution (3) Modern concepts of animal evolution. Prereq: Biology 220.
465 Human Genetics (3) Genetic and molecular principles and problems of human inheritance. Prereq: Biology 220.

470 Aquatic Ecology (3) Introduction to the physicochemical nature of inland waters with description of biotic communities and their interrelationships. Prereq: Chemistry 120-130 and Biology 230. 2 hours and 1 lab.

472 Arachnology (3) Biology of spiders, mites, scorpions and relatives. Prereq: 360 or 380. 2 hours and 1 lab.

473 Herpetology (3) Biology of amphibians and reptiles with emphasis on ecology and adaptive radiation. Prereq: Biology 230. 2 hours and 1 lab.

474 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.

475 Ornithology (3) Behavior, ecology, populations, evolution and field identification of birds. Prereq: Biology 230. 2 hours and 1 lab.

476 Mammalogy (3) Evolution, classification, biogeography, ecology, behavior and functional anatomy of mammals. Prereq: Biology 230 or equivalent. 2 hours and 1 lab.

480 Physiology of Exercise (3) (Same as Physical Education 480.)

490 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.

491 Foreign Study (1-15)

492 Off-Campus Study (1-15)

493 Independent Study (1-15)