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. Prereq 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 meeting. 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. F, Sp

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 and society. Relationship between advertising and marketing; functional components of the advertising process: research, media, creative, and management.

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 creative platforms, 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, vehicle audiences 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. Resume and letter writing, interviewing, and portfolio preparation. Prereq: Progression as a major in the Department of Advertising.

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, and 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. Satisfactory/No credit.

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

AFRO-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.)

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 relevant 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-empesch 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.)
AGRICULTURE AND EXTENSION EDUCATION (042)

201 Field Experience in Agricultural Education (1) Field experience in public school programs in agricultu-
203 at least one in-class essay examination and 3000 words of writing outside the classroom. (Same as History 421.)
209 History and Philosophy of African-American Education (3) Focuses on attempts by Afro-Americans to secure an education 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, college, or graduate level. Writing emphasis: at least one in-class essay examination and 3000 words of writing outside the classroom.
431 Research Seminar in African-American Studies (3) Teaches basic approaches to the research process and development of research skills. Students design and implement a research project of their choice in the field of African-American Studies. Prereq: 201-202 and senior standing. Writing emphasis: course: at least one in-class essay examination and 3000 words of writing outside the classroom.
442 Comparative Property and Development (3) (Same as Sociology 442.)
450 Issues and Topics in African-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.)
461 African Prehistory (3) (Same as Anthropology 461.)
473 Black Male in American Society (3) Examines historical images, myths, and stereotypes which have developed concerning black males in American society. Includes the impact of such critical factors as Black feminism, violence, concepts of masculinity, the family, white males, white females, homosexuality, nationalism, and athletics on black males in America.
480 Black Communities in Urban America (3) Evaluates the social, political, and economic aspects of three major institutions: the church, the family, and the school upon the African-American struggle to survive. Includes political, economic, and social factors utilized by blacks in developing coping strategies and mechanisms. Writing emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.
483 Afro-American Women in American Society (3) Focuses on historical and contemporary sociopolitical factors in American society as they relate to the Black female. Written emphasis: course: at least one in-class essay examination and 3000 words of writing outside the classroom.
491 Foreign Study (1-3) Individualized study of a special project or problem in African and Extension Education, the consultation with the instructor. Prereq: Consent of instructor. May be repeated for credit. Maximum 6 hours.
492 Agricultural and Extension Education Internship (2-8) Supervised work experience in approved county Extension offices, agricultural businesses, or agricultural related agencies. (Requires living off-campus for a specified time.) Prereq: 411 and consent of instructor. Sp
493 Independent Study (1-3) Individualized study of a special project or problem in African and Extension Education, the consultation with the instructor. Prereq: Consent of instructor. May be repeated for credit. Maximum 6 hours.

AGRICULTURAL ECONOMICS (047)

110 Orientation to Agricultural Economics and Business (1) Primary for Agricultural Economics and Business majors. May be repeated for credit. Maximum 6 hours.
210 Introduction to Agricultural Economics (3) Application of economic principles of demand, supply, price determination, and market structure to agriculture, natural resources, rural community development, and international trade and development. Economic 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
310 Farm and Agribusiness Law (3) Survey of law applicable to the farmer, agribusiness manager, and agricultural industry. Property, contracts, torts, drainage and water rights, landlord-tenant relationships, taxation and insurance, forms of business organization, estate planning, corporate and personal income tax planning, regulatory laws, and other selected topics. Prereq: Junior standing or consent of instructor. F
342 Farm Business Management I (3) Principles and procedures of farm business management, including planning, organization and system of operation: nature of managerial processes; farm records and their uses; budgeting; economic aspects of acquiring and management of capital, land, labor and machinery resources. Prereq: Economics 201 and Junior standing. 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. Sp
352 Commodity and Financial Futures Markets (3) Foundations of basic principles, theory, function, and organizational characteristics common to all futures markets. Special topics on risk management, forward price discovery, securing operating capital and market capacity, for information use and dissemination. Course is intended for advanced undergraduate students.
410 Seminar in Agricultural Economics and Business (1) Primarily for Agricultural Economics and Business majors in their senior year. Analysis of contemporary problems in the field. Discussion of career objectives, opportunities, and placement process. Assignments for written and oral presentation.
412 Agricultural Finance (3) Macroeconomics, financial objectives, acquisition of debt and equity funds, capital investments, capital allocation, debt repayment, credit analysis, borrower and lender loan application analysis, insurance strategies, computer applications, kinds and sources of agricultural credit, and financial intermediation. Prereq: 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 access to commodity, credit, food, and trade policy; relationship between domestic and international agricultural policy. Prereq: 210 or consent of instructor. Sp
440 Agricultural Production Economics (3) Application of microeconomic theory to problem of resource allocation, enterprise selection, scale of operation of agricultural firms; economics interpretation of technical, agricultural production relationships. Prereq: 210 and Economics 311. F
442 Farm Business Management II (3) Advanced topics and methods for farm business analysis using micro and mainframe computers; linear programming applications in farm planning; spreadsheet analysis of whole farm business, systems analysis and management control; risk analysis and management; income tax management; farm growth and intergeneration transfer. Prereq: 342. Sp
450 Agricultural Price Analysis (3) Demand and supply analysis, public policy tools for influencing 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
493 Independent Study (1-3) Directed individual or team research and report writing. Off-campus internship and 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)

200 Specialty Areas of Agricultural Engineering (1) Activities and opportunities in five areas of specialization: requiring for each area: projected career activities. 1 hour. F
300 Environmental Relationships (2) Applications of thermodynamics principles to agriculture. Psychromet-
310 Power Units and Machinery (2) Components and operating characteristics of internal combustion engines and tractor power transmission systems; functional analysis; capabilities of agricultural machines; tractor-implement system performance. Prereq: Mechanical Engineering 331; 1 hour and 1 lab. Sp
320 Structures and Environment (2) Environmental control systems; heat transfer; heath transfer and control systems; temperature problems in the field. Discussion of career objectives, opportunities, and placement process. Assignments for written and oral presentation. F
330 Processing (2) Application of basic engineering sciences to processing and handling of agricultural products; physical properties; thermal processing; cur-
420 Agricultural Engineering Design Fundamentals
(2) Nature of design; creativity; analysis and synthesis; design team organization; selection and functional analysis of design project. Prereq: Senior standing. 1 hour and 1 lab. F

425 Agricultural Engineering Design Project (2) Synthesis of design; structure, kinematic, control system analysis; preparation of design drawings, specifications, models and laboratory equipment. Senior and graduate students. Coreq: 340. 1 hour and 1 lab report of project. Prereq: 420. 1 hour and 1 lab. Sp

430 Mobile Hydraulic Power System Design (2) Functional and operational characteristics of mobile hydraulic system components, including pumps, valves and actuators; analysis and synthesis of power transmission and control circuits. Prereq: Engineering Science and Mechanics 341. 1 hour and 1 lab. Sp

435 Design of Mechanisms for Agricultural Machines (2) Types of mechanisms; transmission angles; synthesis of plane mechanisms; introduction to space mechanisms. Prereq: Mechanical Engineering 465 or equivalent. 1 hour and 1 lab. Sp, AE

440 Irrigation and Drainage Design (2) Design of irrigation and drainage systems including crop response, climate, water quantity and quality, and system characteristics. Prereq: 340 or equivalent. 2 hours and 1 lab (lab on alternate weeks). Sp, AO

445 Processing and Materials Handling Design (2) Systems and components for processing and utilization of agricultural commodities, including energy, mass balance, storage, handling and economic merit. Prereq: 330. 1 hour and 1 lab. Sp, AO

450 Electrical Distribution and Utility Design (2) Design of on-farm electrical systems; control, motors, stray voltage, special electrical loads; safety. Prereq: Electrical Engineering 301. 1 hour and 1 lab. Sp, AE


460 Design of Agricultural Structures (2) Design fundamentals for wood, steel and concrete components, compression and tension members; beam and column design; pole structure design; fasteners and joint design. Prereq: 320. 1 hour and 1 lab. Sp. AO

470 Special Problems in Agricultural Engineering (1-3) Problems and solutions related to agricultural engineering. May be repeated. E

480 Selected Topics in Agricultural Engineering (1-3) Current trends and problems in agricultural engineering. May be repeated. E

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.

300 Microcomputers in Agriculture (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 (2) Applications of computer systems and microcomputers for agriculture including system organization and selection, communications, data base management, electronic spreadsheets, number crunching, and word processing. Prereq: Agriculture 300. 1 hour and 1 lab.

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

480 Agricultural Management Systems Analysis (3) Interdisciplinary 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 evolution of internships among various sub-systems. Open to juniors and seniors by invitation only.

AIR FORCE AEROSPACE STUDIES (094)


201-202 Air Force Aerospace Studies (1,1) Introduc -

300-302 Air Force Aerospace Studies (3,3) Air Force leader -

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 international aspects associated with United States defense policy; impact of technological and international developments upon strategic preparedness; emphasis on developing communicative skills. Prereq: Air Force ROTC approval and completion of either 208 or 101-202, 203-304. 300-304.

490 Independent Study (1-15) Content varies. May be repeated.

AMERICAN STUDIES (099)

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

241 Breeds of Farm Animals (3) Evolution and formation of cattle, goats, horses, poultry, sheep, and swine. Breeding structure, history, development, changes in American and international history. Prereq: consent of the instructor. 3 labs. Sp.

261 Fundamentals of Food Animal Evaluation (3) Structure and production principles of food animal industries. Criteria for food animal evaluation, market classes and grades of cattle, poultry and pork products, lamb and wool, and swine. Subjective and objective techniques for evaluation, functional tests, cattle cull, meat evaluation, poultry, sheep and swine. Introduction to and utilization of species specific performance programs. 3 labs, F, Sp
231 Anatomy and Physiology of Farm Animals (3) Skeletal and joints, muscles, blood and microcirculation; the nervous, endocrine, cardiovascular, respiratory and digestive systems; demonstrations of physiological phenomena. Prereq: Biology 120. 2 hours and 1 lab. F, Sp.

232 The Physiology of Reproduction and Lactation (3) Biology of sex and sexual differentiation, functional anatomy of male and female, reproduction and lactation, gamogenesis, neuroendocrinology and endocrinology of reproduction and lactation, sex cycles, folliculogenesis, ovulation, spermatogenesis, fertilization, embryonic development, implantation, pregnancy, parturition, initiation of lactation and maintenance of the dry period, artificial control of reproduction and lactation. Prereq: Biology 120. 2 hours and 1 lab. Sp (Same as Zoology 322.)

331 Animal Nutrition and Feeds (3) Properties, functions, deficiencies, toxicity symptoms, essential nutrients; nutritive value, properties and functions of feedstuffs. Prereq: Chemistry 110. 3 hours lecture/week.

332 Ration Formulation and Linear Programming Applications (3) Nutrient requirements and ration formulation for beef and dairy cattle, sheep, horses, swine, poultry and laboratory animals. Mathematical and computer solutions for formulating complex rations with constraints. Prereq: 331, Math 121 and an introductory computer science course or consent of instructor. 1 hour and 2 labs.

341 Principles of Animal Breeding (3) Genetic and environmental bases of animal variation. Selection and mating systems as mechanisms of genetic change. Planning breeding programs for economically important domestic species. Prereq: Biology 220. 2 hours and 1 lab. Sp.


363 Judging Poultry and Poultry Products (2) Grading of poultry and poultry products according to USDA standards and the poultry quality. Prereq: 261 or consent of instructor. 2 labs. Sp.

364 Horse Selection and Judging (2) Selection of horses for soundness and functional efficiency and the relationship of form to function in various breeds of horses. 2 labs. Sp.

421 Applied Reproduction in Farm Animals (3) Collection, evaluation and preservation of ova, spermatozoa and embryos; application of methods of natural breeding and techniques of artificial insemination and embryo transfer; herd sire and dam evaluation; pregnancy determination; gestation and parturition; infertility: recent advances in theriogenology. Prereq: 322 and consent of instructor. 1 hour and 2 labs. F, Sp.

461 Advanced Beef Cattle, Dairy Cattle, Horse, Poultry, Sheep and Swine Judging (1) Specialization in judging cattle, selection and presentation of oral reasons for classes of beef cattle, dairy cattle, horses, swine, poultry and swine breeds. Consent of instructor. 2 labs. Satisfactory/No credit. F, Sp.

481 Beef Cattle Production and Management (3) Integration of principles of nutrition, physiology, and breeding into complete beef cattle management programs. Structure and function of enterprise establishment, systems of production, production practices, and herd improvement programs. Alternatives evaluated in terms of production response and economic returns. Prereq: Completion of Animal Science sophomore and junior core courses or consent of instructor. 2 hours and 1 lab. Sp.

482 Dairy Cattle Production and Management (3) Integration of principles of nutrition, physiology, and breeding into complete dairy cattle management programs. Structure of industry, enterprise establishment, systems of production, production practices and herd improvement programs, analysis of production responses and economic returns. Prereq: Completion of Animal Science sophomore and junior core courses or consent of instructor. 2 hours and 1 lab. F.

483 Pork Production and Management (3) Integration of principles of selection, nutrition, breeding, physiology, and marketing in pork production programs. Structure of industry, enterprise establishment, systems of production, production practices and herd improvement programs. Alternatives evaluated in terms of production responses and economic returns. Prereq: Completion of Animal Science sophomore and junior core courses or consent of instructor. 2 hours and 1 lab. Sp.

484 Poultry Production and Management (3) Structure of the poultry enterprises including rearing, housing, feeding, processing and marketing. Prereq: Senior standing and permission of instructor. Completion of Animal Science sophomore and junior core courses or consent of instructor. 2 hours and 1 lab. Sp.

485 Sheep and Lamb Production and Management (3) Integration of principles of selection, nutrition, breeding, physiology and ethology into a comprehensive sheep production program. Importance of the industry, kinds of sheep enterprises, management of feed and pasture resources, health maintenance and aid, breeding, pest control, and equipment. Prereq: Completion of Animal Science sophomore and junior core courses or consent of instructor. 2 hours and 1 lab. Sp - AO.

486 Lamb and Wool Production and Management (3) Integration of principles of selection, nutrition, breeding, physiology, and marketing in complete lamb and wool production programs. Structure of industry, enterprise establishment, systems of production, production responses and economic returns. Alternatives evaluated in terms of production responses and economic returns. Prereq: Completion of Animal Science sophomore and junior core courses or consent of instructor. 2 hours and 1 lab. Sp - AO.

488 Companion Zoo and Lab Animal Management (3) Principles of nutrition, physiology, breeding, handling, and history of breeds of common household pets. Zoo animals and animals used in scientific research. Specific species requirements and peculiarities. Laws and agencies governing use of laboratory animals. Laboratorio de bioetica: use of blood metabolites commonly used to monitor health of laboratory animals. Prereq: Completion of Animal Science sophomore and junior core courses or consent of instructor. 2 lectures and 1 lab. Sp - AE.

493 Special Problems in Animal Science (1-3) Special research and/or special reports based on supervised independent study; approved supervised work experiences in state-federal laboratories or in private industry. Written report is required. May be repeated for a maximum of 6 credits. Prereq: Senior 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 research. Prereq: Senior standing. One 2 hour lab. F, Sp.

ANTHROPOLOGY (122)


120 Prehistoric Archaeology (3) Introduction to methods and techniques used to identify and date archaeological cultures and to research cultural evolution. Overview of the prehistory of Africa, western Europe, south Asia and the Americas from earliest dated human cultures to rise of complex civilizations.

130 Cultural Anthropology (3) Major concepts and methods in the study of culture; survey of cross-cultural similarities and differences in subsistence, social organization, economic, political and religious institutions; language, ideology and arts. Contributions of anthropology to resolving contemporary human problems.


220 Prehistory of Tennessee (3) History of archaeological research in Tennessee and survey of prehistoric Indian cultures from initial occupation of the state to European contact.

230 American Cultures (3) Anthropology in the study of cultural society includes multi-ethnic communities, social classes, power structures, etc.

302 Religion of Primitive Peoples (3) (Same as Religious Studies 302.)

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

310 North American Indians (3) Comparative overview of Indian cultures of North America. Topical covers are problems resulting from contact and acculturation. Writing emphasis course at least one in-class essay examination and 3000 words of writing outside the classroom.

311 Southeastern Indians (3) Survey of Southeastern Indian cultures at the time of European contact. Emphasis on Cherokee culture and on the social, economic and religious aspects of aboriginal groups. Prereq: 130 or consent of instructor.

312 Appalachian Culture (3) Traditional Southern Appalachian subsistence patterns and economy, social organization, beliefs and values, folklore and custom; socio-cultural impacts of industrialization and modernization. Prereq: 130 or consent of instructor. Writing emphasis course at least one in-class essay examination and 3000 words of writing outside the classroom.

313 Peoples and Cultures of Mesoamerica (3) Pre-Columbian and Hispanic cultures of Mexico, Guatemala, Belize, El Salvador and Honduras. Patterns of cultural continuity and cultural change throughout Mesoamerica's history. Prereq: 130 or consent of instructor. (Same as Latin American Studies 313.) Writing emphasis course at least one in-class essay examination and 3000 words of writing outside the classroom.

314 Peoples and Cultures of Africa (3) Ethnographic survey of peoples of sub-Saharan Africa, focusing on cultural diversity, human ecology, and contemporary social issues. Prereq: 130 or consent of instructor. (Same as Afro-American Studies 314.) 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 social status 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 groups.

360 North American Prehistory (3) Prehistoric cultures of North America from initial occupation of the continent to European contact. Writing emphasis course at least one in-class essay examination and 3000 words of writing outside the classroom.

361 Historical Archaeology (3) Historical archaeology of Euro-American, Afro-American, and Asian American cultures in the United States from 15th to 20th centuries.

362 Principles of Archaeology (3) Research strategies used in developing method and theory, constructing cultural histories, identifying site function and settlement-subsistence patterns, and evaluating 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 consent of instructor. May be repeated. Maximum 6 hours.
410 Principles of Cultural Anthropology (3) Exploration of major concepts, theories, and methods in cultural anthropology, with application to specific ethnographic studies. Prereq: 130.

411 Linguistic Anthropology (3) Basic linguistic concepts, language as a social institution, and methods of study. Prereq: 130 or consent of instructor.

412 Folklore in Anthropology (3) Introduction to the study of oral traditions and folklife, with emphasis on the study of folklore in its historical and cultural context. Prereq: 130 or equivalent.

413 Dynamics of Culture (3) Introduction to cultural systems and processes, with emphasis on the study of cultural change and cultural evolution. Prereq: 130 or consent of instructor.

420 Fieldwork in Archaeology (3-9) Practicum work in archaeological data recovery and analytical techniques. Prereq: Consent of instructor. May be repeated. Maximum 9 hours.

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

450 Current Trends in Anthropology (3) An introduction to current directions of research and theory in anthropology.

460 Selected Topics in Archaeology (3) Regional or theoretical issues in archaeology for undergraduate students. May be repeated. Prereq: 120 or permission 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 Afro-American Studies 461.)

462 Early European Prehistory (3) Origins and evolution of human culture in Europe through the beginnings of settled life. Prereq: 120 or consent of instructor. (Same as Afro-American Studies 462.)

463 Rise of Complex Civilizations (3) Development of complex societies in Old World from origins of agricultural economies to rise of States. Focus on Mesopotamia, Mesoamerica, and China. Prereq: 120 or consent of instructor. Writing emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

464 Principles of Zoarchaeology (3) Basic zoological and paleontological concepts, with emphasis on the archaeological use of animals in subsistence and culture. Prereq: 120 or consent of instructor. Writing emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

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

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

483 Independent Study (1-15)

491 Primate Evolution (3) Living and fossil primates, their social behavior and evolution. Prereq: 110.

493 Independent Study (1-15)

494 Primate Behavior (3) Social organization and behavior of selected groups of primates. Prereq: consent of instructor.

495 Human Paleontology (4) Introduction to human fossil record from the earliest human remains to the earliest representatives 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.)

499 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. Architectural design as a creative process. Orientation to courses and programs of the school.

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 architectural history and the built environment for non-architecture majors. Significance of our surroundings, forces that create them. Creative aspects of design. Survey of building types for local to global. Strategies for individual and collective involvement.

117 Design Fundamentals I (3) Introduction to design processes. Prereq: 111. F

117 Design Fundamentals II (4) Design principles and processes in two and three dimensional design exercises. Coreq: 102. Sp

202 Second Degree Program: Seminar I (2) Theory and practice in architecture. Students explore the role of the architect in contemporary society. Topics include ecological theory, methods of analysis, and review of selected case studies. Coreq: 172. F

204 Second Degree Program: Seminar II (2) Selected readings in history, theory, and design methodology with emphasis on contextual issues and architectural ordering principles. Coreq: 281. F

211 History of Architecture I (3) Architectural thought and ideas of building and community form. Ancient times to the Renaissance. Prereq: History 151, 152. F

212 History of Architecture II (3) Architectural thought and ideas of building and community form. Renaissance to mid-twentieth century. Prereq: 211. Sp

213 History and Theory of Contemporary Architecture (3) Architectural thought in design practice in the late nineteenth to mid-twentieth century. Examples of contemporary works and review of theoretical issues. Prereq: 212. F

231 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 demonstrations. Prereq: 212. F

232 Introduction to Architectural Technology (3) Place of building technology in architectural design. Introduction to design and history of building materials and construction; environmental controls. Coreq: 211.


323 Advanced Computer Applications (3) Computer applications in architecture, with special emphasis on structural calculations. Prereq: 231.


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.

333 Advanced Structural Design (5) Analysis and design of multiple structures. Structural and constructional aspects of building, including structures in steel, concrete, masonry, and timber to satisfy loading and building code requirements. Prereq: 352 or equivalent.

334 Advanced Architectural Structures (3) Principles of structural design in relation to materials and form. Advanced mathematical and experimental analysis of structures, including use of computer programs. Prereq: 323 or equivalent.

335 Advanced Design of Steel Buildings (3) Construction and maintenance of steel buildings. Large and special structures, Composite construction. Fireproofing; building costs. Prereq: 323 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: 323 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.


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

403 Introduction to Preservation (3) History, theory, and 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 (2) Historical and critical review of the major ideas of architecture through the ages. Open to all students.
409 Cultural Comparison of Housing Patterns (3) Patterns of traditional and contemporary housing in Japan, Poland, Hungary, East Germany, Rumania, Bulgaria, Yugoslavia. (Same as Medieval Studies 415.)

412 Non-Western and Indigenous Architecture (3) Building responsive to climate, material availability, and economic level, as designed by anonymous builders. Examples from pre-historic times to the present including the fertile Crescent; 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 examples examined through readings, lectures, discussions, 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 Classical 415.)


417 The International Style (3) A survey of architecture of the early modern movement, primarily in Europe and America, covering the years 1920 to 1960.


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

421 History of Landscape Architecture (3) Intellectual, societal, and geographical influences which provided 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 I-4) Individual projects under faculty direction. Credit adjusted to project maximum credit 6 hours.

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

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: 332, 342, Coreq: 471, F.

433 Earthquake-Resistant Structures (3) Analysis and design of structures to resist earthquake effects. Earthquake phenomena, vibration of single 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; foundations. Prereq: Consent of instructor.

435 Planning and Design of Tall Buildings (3) Architectural, economic and urban design considerations in design of tall buildings. Environmental and service systems.

443 Building Energy Analysis (3) Balancing heat flow through external skin of residential and small 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 exterior, interior, and interior finishes. Prereq: 314 and 433. Consent of instructor.

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. Services are assessment of the building industry and its influence on practice; analysis of the basic management functions within professional firms; and legal and ethical concerns facing practitioners today. Special obligations and privileges of the design professional.

463 Architectural Development (3) Principles and practice of the architect as a developer. Impact of economics, finance and urban policy on the design and development of architecture in Europe and Japan.

464 Project and Construction Management (3) Principles, methods, and application of project and construction management in the building process. Project manager's and architect's function, responsibility, and activities investigated through case studies. Methods and theories of estimating project cost and building cost in current practice. New techniques of cost analysis.


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

469 Codes, Zoning, and Fire Protection (3) Theory, review, and research of city, county, state, regional, and national codes and zoning. History and development of fire safety and building codes; history and development of zoning emphasizing architect's responsibility for specific project application. Characteristics of fires in buildings. Fire codes, building evacuation, sprinklers and other fire protection, emergency power and lighting. Fire resistant materials and construction.

471 Architecture Design V (6) Design project from conceptual through design development phase. Specification of component building systems including structural, mechanical, lighting and construction details. Prereq: 372, F.

472 Architectural 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.

480 Comprehensive Design Project I (3) Project selection and preparation for Architecture 482. Formation and documentation of hypotheses. Preparation of background research for program information. Goals and concepts set forth. To be taken semester immediately preceding 482.

481 Advanced Architectural Design Topics (6) Special areas which affect architectural design, such as alternative approaches to design, energy, urban design, urban development, structural studies, historic preservation, and economics from this point onward may relate to the student's Comprehensive Design Project. Prereq: 472. Certain architectural electives may be stipulated as prerequisite.

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. Completed project will address all issues of environment, structure, enclosure, use, and ethical considerations of design application. Design is expected to stand up to rigorous scrutiny regardless of ideal, economy of means, durability, validity for stipulated use, quality of cultural expression, and character of setting. Prereq: 480 and satisfactory completion of all design courses.

491 Foreign Study (1-15) Research and design projects conducted under direction of architect or expert in an allied profession, in service to public service organizations or agencies of government, and public groups. Not a Design Course elective.

493 Independent Study (6) Faculty initiated studies and projects which are approved by the dean and conducted in a studio. May be repeated once. Prereq: Consent of dean. E

ART (140)


103 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.

104 Fabric: Experimental Media on Cloth (3) Experimental media and methods in development of two-dimensional fiber works. Use of machine copying, laser printing, photocopy machine transfers, airbrush, machine free stitching, pencils, and related media.

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 metalworking and jewelry fabrication techniques including repoussé, annealing, forging, chasing, embossing, clamping, drilling, rolling,inking, 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 print-making processes, types of print-media, monotype, monoprint, relief and collagraph.


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 Expressing 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. History 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 courses requiring 1,500 words of composition and 3,000 words of writing outside the classroom.

201 Fabric: Painting and Dyeing (3) Painting and dyeing processes in the development of surface design on fabric, including batik, direct drawing, and 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 stone-setting, fastenings, and mechanisms) with individual studio problems to develop a personal style of expression. Prereq: 105. May be repeated. Maximum 6 hours.

206 Enameling (3) Graphic, painterly, and dimensional capacities of vitreous enamel techniques (including bas-te-taille, ciselene, plaque-a-jour, limoges, sgraffito, grisaille, and champleve) with individual studio problems in each personal style of expression. May be repeated. Maximum 6 hours.

209 Special Topics In Fabric and Fiber (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.


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 canvas. 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 6 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-Ceramics for non-art majors.

229 Special Topics in Ceramics (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.

231 Photography I (3) Art of black and white photography. Field and studio shooting, history of photography, basic developing, and enlarging techniques.

232 History of Photography (3) Photography as a fine art. Constructing work of Steiglitz, Strand, Weston, and White. (Does not apply to art history requirement.) Prereq: 231.

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

241 Sculpture I (3) Problems which explore basic materials and techniques including clay modeling, plaster construction, moldmaking, limited work in plastics, wood, or metal.

242 Life Sculpture (3) Modeling techniques in clay and wax, working in figure. Possibilities of expression with human figure as subject. Modeling process as both observational and material handling technique. Prereq: 101, 103, or consent of instructor. May be repeated. Maximum 6 hours.

243 Metal Cast Sculpture I (3) Metal casting methods in bronze or aluminum. May include lost wax, styrofoam sand, ceramic casting methods. May be repeated. Maximum 6 hours.

244 Wood Sculpture I (3) Wood as sculptural medium. May include use of hand and power tools, carving, and construction.

245 Steel Sculpture I (3) Problems to introduce steel as a material for the creation of sculpture. Development of welding techniques.

246 Mixed Media Sculpture I (3) Use of two or more materials, and a variety of sculptural techniques, joined to create dimensional form. May include modeling, casting, molding, construction, and found objects.

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

251 Beginning Graphic Design (3) Survey of graphic design; tools, materials, techniques, lettering, and use of type. Layout and design. Prereq: 101. May be repeated.

252 Production (3) Design and layout; practice of mechanical preparation of art for various printing processes; skills and craftsmanship emphasized. Prereq: 251.

253 Advertising Design (3) Fundamentals of lettering and layout for newspapers, magazines, television, outdoor advertising. Non-art majors only.

255 Special Projects: Graphic Design/Illustration (3) Student or instructor-initiated course offered at convenience of department. Prereq: Determined by department for individual topic. May be repeated. Maximum 12 hours.

262 Intaglio I (3) Metal plate intaglio printing in traditional and contemporary techniques of etching, softground, drypoint, intaglio, and photo etching. May be repeated. Maximum 6 hours.

263 Lithography I (3) Stone and aluminum plate lithography applying traditional and contemporary techniques of crayon, tusche, transfer methods, and state proofs. May be repeated. Maximum 6 hours.

264 Screen Printing I (3) Screen printing as a fine art medium including development and application of various basic stencils in compositional printing. May be repeated. Maximum 6 hours.

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

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

291 Papermaking Workshop (3) Papermaking as a medium for two and three-dimensional art. Includes sheet forming, imbedding, laminating, embossing, pulp dyeing, inlaying, casting, and other related techniques. Emphasis on presentation of individual form.

292 Film Design (3) Introductory theory and practice of film making. Emphasis on graphic elements through use of motion picture camera. (Same as Cinema Studies 202.)
342 Life Sculpture II (3) Advanced modeling techniques from the figurative to the abstract 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 techniques and methods for bronze and aluminum. 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 steel sculpture in steel and other metals. 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. Satisfaction/No credit only.

351 Intermediate Graphic Design (3) Theory and techniques of visual problem solving for printed materials. Prereq: 254 and 340 or consent of instructor.

352 Corporate Design (3) Concepts of corporate graphics. Problems include all areas of graphic design and illustration. Prereq: 351.

353 Black and White Illustration (3) Black and white techniques 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.

355 Visual Communication Concepts (2) Advanced pictorial perception into a broad range of concepts, methods, and techniques for designer/illustrator. Prereq: 351.

356 Introduction to Computer Enhanced Design (1) The computer as a graphic design tool. Prereq or Coreq: 355. May be repeated. Maximum 12 hours.

360 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. Satisfaction/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 plate with an extended version of the traditional techniques, including xerox and monotype transfers, acid tinting, reverse plates using mylar registration. Extra techniques; inclusions may be repeated. Maximum 8 hours.

364 Screen Printing II (4) Advanced work with basic screen printing techniques including photo screening. Emphasis upon image development and personal concepts. Prereq: 264 and 360. May be repeated. Maximum 8 hours.

371 Early Christian and Byzantine Art, to 1350 (3) Art in Italy and the Eastern Empire from the beginnings of Christian art to 1350. Mosaic and painting, sculpture and architecture. (Same as Medieval Studies 371.)

372 Northern European Painting, 1350-1600 (3) From courtly art of late Middle Ages to Northern Renaissance. Jan van Eyck, Roger van der Weyden, and Durer, early printmakers. (Same as Medieval Studies 372.)

374 Art of Northern Europe, 1600-1675 (3) Concentrated study of Bruegel, Rubens, Rembrandt, Georges de La Tour, Vermeer, Poussin, and Hals.

375 History of Modern Sculpture in Europe and America (3) From 1800 to 1900: Neoclassicism to Rodin. From 1900 to present: emphasis on Cubism, Constructivism, Expressionism, Assemblage, Pop, Minimalism, and Earthwork. Prereq: 361 and 362.

381 Medieval Art of the West, 800-1400 (3) Western European art of the “Dark Ages,” Romanesque, and Gothic periods. (Same as Medieval Studies 381.)

382 The Art of Italy: 1250-1450 (3) Development of exploration of naturalism. Revival of antiquity and development of theories of perspective in the Early Renaissance. Duccio, Giotto, Donatello, Botticelli. (Same as Medieval Studies 382.)


384 Art of Western Europe: 1575-1700 (3) Concentrated study of Caravaggio, Bernini, and Baroque development 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 the classroom.

386 Japanese Art (3) Survey from ancient-Jomon art in clay 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 (3-6) 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.

401 Fiber: Advanced Projects (3-6) Prereq: 302 and 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 Intermediate Computer Enhanced Design (3) Exploration of computer systems, software and techniques. Prereq: 303 or consent of instructor.

405 Advanced 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, electro-plating, electro-polishing, anodization, and photo processes with individual studio problems to develop a personal style of execution. Prereq: 6 hours of metalsmelting or consent of instructor. Maximum 12 hours.

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

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

411 Drawing IV (6) Individualized pursuit of personal drawing techniques and concepts, supplemented by individual studio problems 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, drawing, and watercolor curriculum. Prereq: Determined by department for individual topic. May be repeated. Maximum 12 hours.

420 Ceramics: Individual Projects (3-6) Special topic each semester; e.g., low fire ceramics, alternative firing methods, specialized clay techniques, individual direction stressed. Prereq: 321 and 322. 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. Maximum 12 hours.


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.

425 History of Ceramics Seminar (3) Survey of the history of ceramic design and production from prehistory through contemporary. Emphasis on ceramics sculpture, and the vessel aesthetic. Slide lectures and individual presentations. (Does not apply toward art history requirement.) Prereq: 321 and 322.

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

431 Photography III (3-6) Individual development of photographic problems and techniques. Prereq: 323 and 331. May be repeated. Maximum 12 hours.

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

441 Advanced Sculpture (3-6) Individual development of sculptural problems and techniques. Prereq: 6 hours of 300 level sculpture. May be repeated. Maximum 12 hours.

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


453 Advertising Illustration (3) Concepts of advertising and graphic illustrations as applied to project illustration. Prereq: 354.


455 Senior Portfolio Seminar (3) Assembly, organization, and editing the professional portfolio. Resume construction and design. Professional issues of politics, economics, and ethics for the designer. Prereq or Coreq: 354 and 355.

460 Graphic Design/Illustration Practicum (1-12) Practical work experience in the design or illustration field. Only by prearrangement with the department. Prereq: Senior standing and permission of instructor. May be repeated. Maximum 12 hours.

465 Special Topics in Graphic Design/ Illustration (3) Student or instructor-initiated course offered at discretion of department. Prereq: Determined by department for individual topic. May be repeated. Maximum 12 hours.

469 Special Topics in Film Making (3-6) Exploration of individual projects through advanced color editing techniques, and computerization with other print media. Prereq: 362. May be repeated. Maximum 12 hours.

471 History of Northern American Art (3) Survey of land marks in painting, architecture, sculpture, and design from prehistory to 1900.
472 History of 20th Century American Art (3) Development in architecture, painting, and design from 1900.

473 19th Century American Painting (3) From West and Copley to emergence of "The Eight".


475 History of the 19th Century Painting in Europe and America (3) Emphasis on France: Neo-classicism, Romanticism, Friedrich, Constable, Turner, Corot and Barbizon landscapists, Hudson River Group, Pre-Raphaelite Brotherhood, Manet, Courtbert, Impressionism, Eakins, Homer, Seurat through Cezanne.

476 History of 20th-Century Painting in Europe and America (3) Fauvism, Die Brucke, Cubism, Der Blaue Reiter, Futurism, Dada and Surrealism, geometric abstraction, social commentary, abstract painting, Abstract Expressionism in the USA and parallels in Europe; Pop, Op, Minimal and Concept Art.

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

480 Enameling (2-4) Intermediate to advanced. May be repeated.

481 Museology I: Museums, Purpose and Function (3) Purposes, functions, development and museum of art, history, natural and applied science. (Same as Anthropology 481.)

482 Museology II: Exhibition Planning and Installation (3) Exhibition concept development and implementation. Exhibition design and installation techniques. Publicity, production, matting and framing, shipping and storage. Prereq: 481 or consent of instructor. (Same as Anthropology 482.)

484 Museology III: Field Projects (1-12) Special field projects including restoration, preservation, registration, and related research on campus. Prereq: 481 and 482. May be repeated. Maximum 12 hours. (Same as Anthropology 484.)


486 Art of Indian Asia (3) History of Indian art with consideration of the art of Central Asia and Southeast Asia. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

488 Studies in Art History (3) Concentration in individually selected area. Prereq: 12 hours of art history and 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)

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

495 Visiting Artist Seminar (2) Study and discussion of contemporary art issues conducted by different visiting artists each semester. (Does not apply toward art history requirement.) May be repeated. Maximum 8 hours.

496 Advanced Airbrush (3) Advanced techniques of airbrush drawing, skills and use in illustrations emphasizing commercial applications.

499 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.

ART ARROWMONT PI BETA PHI SCHOOL OF ARTS AND CRAFTS

200 Special Topics (2-4) Student- or instructor-initiated course offered at convenience of department. May be repeated.

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

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

230 Photography (2-4) Beginning to intermediate. May be repeated.

240 Painting (2-4) Beginning to intermediate. May be repeated.

250 Metal Design (2-4) Beginning to intermediate. May be repeated.

260 Fibres (2-4) Beginning to intermediate. May be repeated.

270 Fabric (2-4) Beginning to intermediate. May be repeated.

280 Enamelling (2-4) Beginning to intermediate. May be repeated.

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

400 Special Topics (2-4) Student or instructor-initiated course offered at convenience of department. May be repeated.

410 Drawing (2-4) Intermediate to advanced. May be repeated.

420 Ceramics (2-4) Intermediate to advanced. May be repeated.

430 Photography (2-4) Intermediate to advanced. May be repeated.

440 Painting (2-4) Intermediate to advanced. May be repeated.

450 Metal Design (2-4) Intermediate to advanced. May be repeated.

460 Fibres (2-4) Intermediate to advanced. May be repeated.

470 Fabric (2-4) Intermediate to advanced. May be repeated.

480 Enamelling (2-4) Intermediate to advanced. May be repeated.

490 Wood (2-4) Intermediate to advanced. May be repeated.

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 consideration of pertinent literature and research. Prereq: 301 and admission to Teacher Education Program.

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.

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. Sp

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, Sp

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. F

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. Prereq: 410 and admission to Teacher Education Program. Satisfactory/No Credit only. F

482 Internship II: Grades K-12 (3-6) Demonstration of professional competence in planning, instruction and classroom management. Internships are 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 STUDIES (145)

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

101-India and the Islamic World. 102-China and Japan.

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

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

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

141-142 Elementary Modern Hebrew I, II (4,4) Taped language program. 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.

221-222 Intermediate Modern Standard Arabic I, II (5,5) Literary Arabic, the language of the press, broadcasting, literature, and formal situations. Meets every day, three days with instructor and two with native informant in addition to language lab. Must be taken in sequence. Prereq: 121-152 or equivalent or consent of instructor.

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

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

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

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

311-312 Chinese Literature in English Translation (3,3) 311-Classical literature. 312-Vernacular and modern literature. Writing-emphasis 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-Classical and traditional: masterpieces of poetry, fiction, and drama to 1800. 314-Moderne: masterpieces of fiction since 1800. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

315 The Literature of India in English Translation (3) Major genres and masterpieces of Indian literature—epic, poetry, drama, court poetry, modern novel. Concentration on ancient and classical periods of Indian literary history.

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

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400 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.

401 Audiology I (3) Basic audiometric principles. Survey of hearing, with emphasis on the physical properties of sound, the hearing mechanism, and the normal anatomy of the auditory system. Prerequisite: Consent of instructor. (Same as Special Education 371.)

402 Audiology II (3) Basic principles of clinical audiometry, introduction to hearing disorders, and hearing loss classification. Prerequisite: Consent of instructor.

403 Audiology III (3) Various methods and procedures used in the treatment of hearing loss; the study of drug effects on hearing; physical and psychological aspects of hearing loss. Prerequisite: Consent of instructor. (Same as Special Education 371.)

404 Audiology IV (3) Social, ethical and legal implications of hearing loss; the role of the audiologist in the rehabilitation of persons with hearing loss. Prerequisite: Consent of instructor.

405 Problems in Speech Pathology (1-3) Prerequisite: Consent of instructor.


407 Clinical Practice in Speech-Language Pathology I (1-4) Prerequisite: 302, 331 or consent of instructor. Enrollment for fewer than 2 semester hours must have prior departmental approval. Prerequisite: Consent of instructor.

408 Voice Disorders (3) Etiology, diagnosis, and treatment of organic and functional voice disorders. Prerequisite: Consent of instructor.

411 Articulation Disorders (3) Etiology, diagnosis, and treatment of speech disorders of selected individuals. Prerequisite: Consent of instructor.

412 Foreign Study (1-15) May be repeated. Maximum 9 hours.

413 Stuttering (3) Nature, appraisal, and treatment. Prerequisite: Consent of instructor.

414 Clinical Practice in Speech-Language Pathology II (1-4) Prerequisite: Consent of instructor. Enrollment for fewer than 2 semester hours must have prior departmental approval. Prerequisite: Consent of instructor.

415 Clinical Practice in Audiology I (1-4) Prerequisite: Consent of instructor.

416 Clinical Practice in Audiology II (1-4) Prerequisite: Consent of instructor.

417 Audiology I (3) Basic audiological principles. Survey of hearing, with emphasis on the physical properties of sound, the hearing mechanism, and the normal anatomy of the auditory system. Prerequisite: Consent of instructor. (Same as Special Education 371.)

418 Audiology II (3) Basic principles of clinical audiometry, introduction to hearing disorders, and hearing loss classification. Prerequisite: Consent of instructor. (Same as Special Education 371.)

419 Audiology III (3) Various methods and procedures used in the treatment of hearing loss; the study of drug effects on hearing; physical and psychological aspects of hearing loss. Prerequisite: Consent of instructor. (Same as Special Education 371.)

420 Audiology IV (3) Social, ethical and legal implications of hearing loss; the role of the audiologist in the rehabilitation of persons with hearing loss. Prerequisite: Consent of instructor.

421 Independent Study (1-15) May be repeated. Maximum 9 hours.

422 Research (1-15) May be repeated. Maximum 9 hours.

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493 Research (1-15) May be repeated. Maximum 9 hours.
220 General Genetics (4) Classical and modern prin-
ciples of heredity. 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 satisfac-
tory ACT scores; Chem 120-130 or 3 hours A or C in ACT hour discussion each week. May be taken in any se-
quence or combination with 210 and 230.

230 General Ecology (4) Relations between organisms and
their environment, including human environmental
problems. Prereq: 112-120 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 120-130. 3 hours lecture, 1 hour
discussion/field trip each week. May be taken in any se-
quence or combination with 210 and 220.

BOTANY (198)

110-120 General Botany (4.4) 110 - Introduction to bot-
any through tree identification; basic organization and
function of cells; respiration; photosynthesis; genet-
icsm (including meiosis, mitosis, Mendelian inheritance);
ongoing field work. Laboratory practicals; plant botan-
ical garden, survey of plant kingdom (bacteria, algae, fungi, mosses, ferns, conifers, and flowering plants). 120 - Plant growth, anatomy, growth regulation; uptake and transport; organ
of life and mechanism of evolution; ecology, importance
to humans and environmental concerns. May not re-
ceive credit for both Botany 110-120 and Biology 110-
120, Botany 118-128, or Biology 150. 110 - F, Su; 120
Su

118-128 Honors: General Botany (4.4) Same as Gen-
eral Botany 110-120 with emphasis on special topics and
more extensive laboratory presentations and field
experiences. Prereq: Open to freshmen with a score of 28
or better on the natural science section of the ACT test or equivalent and satisfactory high school botany
scores; Chemistry 120-130 or equivalent. Recommended: Bot-
any 110-120 or 118-128, or Botany 118-128 or Biology 110-120 or Botany 110-120 or Biology 150. 110 - F; 120
F-Su

305 Socio-Economic Impact of Plants (3) Signifi-
cance of plants in origin and 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,
anthropology, and evolution with emphasis on their
implications for human society. Same as Anthropology 306.

309 Biology of Human Affairs (3) Basic biological prin-
ciples involved in determination and preservation of an
environment in which humans and their cultures may
survive.

310-320 Plants: An Evolutionary Survey I, II (3,3)
Morphology, development, natural history, and evolu-
tion. 310 - Surveys vascular plants (monera, algae, fungi, bacteria). 320 - Surveys vascular plants (ferns, fern allies, gymnosperms, and flowering plants). Need not be taken in sequence. Prereq: 8 hours biologi-
cal sciences. Sp, F, Su

313 Introductory Plant Pathology (3) Same as Ento-
myology and Plant Pathology 313.

321 Introductory Plant Physiology (4) Organismal
physiology of plants; water relations, mineral nutrition,
metabolism, energy, structure of photosynthetic reactions,
effects of light, temperature, and other environmental
factors. Lecture and lab. Prereq: One year general chem-
istry and one year biological sciences. See page 56.

322 Field Studies in Botany (Special topics) Field
studies in botany utilizing the plant community of a
special plant group. Selected field topics will vary and
may include: Bryology; Lichenology, Plethodontidae; Agros-
ticology; Mycoflora; Ecological botany; Plant population
Ecology; Forest flora; Orchid flora; Synanthropometry, Woody Plants, and Botanical Photog-
raphy. May be repeated, but no specific topic may be
repeated for credit. Maximum 9 hours.

401-402 Mechanisms of Plant Speciation (3) Process
of speciation and evolution with emphasis on botanical
examples. Geographic variation, allopatric speciation,
migration of quantum gene complex, polygamy, hybrid-
ization, microspeciation. Prereq: 310-320 and Biology
210.

412 Plant Anatomy (3) Cells, tissues and organs; their
development in vegetative and reproductive structures
of vascular plants. Emphasis on used plants. Prereq:
110-120 or Biology 110-120.

420 Paleobotany and Palynology (3) Same as Ge-
ology 420.

421 Plant Ecology (3) Interactions between indivi-
duals, species, communities and their environments. Cir-
culation of energy and matter in ecosystems. Weekly field
trips or laboratory periods, and at least two weekend
field trips. Prereq: 310-320 or equivalent.

441-442 Undergraduate Research Participation (1-
2-1,2) Experience in active research projects under
supervision of staff members. Prereq: Junior or senior standing recommended. May be repeated. Maximum 8 hours. E

451 Plant Tissue Culture (3) Methods for the culture of
cells, tissues, and organs including media preparation
and maintenance of cultures. Lecture and lab. Prereq:
Botany 110-120 or 118-128 or Botany 118-128 or Chem-
istry 120-130 or equivalent. Recommended: Bot-
any 310-320, 321, 412, Microbiology 310 or 319, Orni-
tmental Horticulture and Landscape Design 330; and Plant and Soil Science 331. (Same as Ornamental
Horticulture 451).
hydrocarbons, structure, and reactions of various organic functional groups. Biochemistry: amino acids, proteins, carbohydrates, lipids, nucleic acids, 3 hours and 1 lab. Prereq: 100 or 130 or 131 or 138, E.

120-130 General Chemistry (4,4) A general course in theoretical and experimental aspects of chemistry. 130 - Chem 101. Atomic theory, chemical bonding, stoichiometry, quantitative treatment of gas laws, quantitative aspects of solutions, introduction to heat, kinetic-molecular theory, thermochemistry, descriptive chemistry of non-metallic and metallic elements, introduction to organic and biochemical chemistry. Prereq: 130, 120, 3 hours and 1 lab. E.

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

125-135 Honors: General Chemistry (4,4) 3 hours and 1 lab. 128-F, 138-Sp.

140 Chemical Programming (2) Use of the computer in solving problems encountered in chemistry. Required of all 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 program in analytical, inorganic, organic, physical, or polymer chemistry. Students work with researchers to acquire expertise in planning experiments, interpreting results, and formulating hypotheses. Credits may not be applied toward a major or minor in any field. Not a substitute for prerequisite 400. Prereq or Coreq: 200 or higher level course in chemistry and consent of instructor. May be repeated. Max. 12 hours.

230 Inorganic Chemistry (3) Periodicity, valence, bonding, and the descriptive chemistry of the elements; coordination compounds; nuclear chemistry; transition elements. Prereq and 230, 6 weeks. 2 hours and 1 lab. Prereq: 130 or 131 or 138, F.

310 Analytical Chemistry (3) Principles and practices of quantitative measurements in chemical systems. Atomic and molecular, and redox equilibria; applications of titrimetric analysis; potentiometry; elementary spectrochemistry; chemical separations including chromatography, ion exchange, and solvent extraction. Prereq: 130 or 131 or 138, E.

319 Analytical Chemistry Laboratory (1) Experiments on topics covered in 310. Coreq: 310, E.

320 Advanced Analytical Chemistry (3) Modern electroanalytical methods; mass spectrometry; optical spectrometric techniques; magnetic resonance methods; advanced chromatographic theory. Prereq: 310, Sp.


350-360 Organic Chemistry (3,3) Compounds of carbon and hydrogen and their functional groups, synthesis, spectroscopic and other physical properties. Must be taken in sequence. Prereq: 130 or 131 or 138; Coreq for 360, 369, E.

369 Organic Chemistry Laboratory (2) Experiments on topics discussed in 350-360. Coreq: 360, One 5-hour lab. E.

400 Research in Chemistry (3) Open to senior majors with consent of department head. Written reports are required. Advanced students work with faculty on projects requiring knowledge and skills acquired in chemistry curriculum. May be repeated. Maximum 6 hours. E.

405 Topics in the Development of Chemistry (3) Historical development of topics such as the atomic theory; chemical industry; interrelationships of population, energy, and food. Subject matter may vary from one offering to another. Assignments include readings from older original literature [Dalton, Faraday, Kekule] and from current journals and monographs. Includes the use and misuse of evidence, at least one in-class exam and one take-home exam. Prereq: 350 or consent of instructor. Coreq: Senior standing in chemistry. Writing emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

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

409 Advanced Chemical Experimentation (3) Laboratory course in applications of atomic, and electronic spectroscopy, and using experimental techniques to solve chemical problems. Synthesis and characterization of organic and inorganic compounds. Prereq and 369, 2 hours and 1 lab. Prereq: 130, 120, 3 lab. E.

430 Advanced Inorganic Chemistry (3) Atomic and molecular structure, bonding theories, descriptive chemistry of the elements. Prereq and 369, 2 hours and 1 lab. Prereq: 130, 120, 3 lab. E.

431 Radioactivity and Its Application (2) Radioactive materials in tracer and therapeutic applications. Radioactive decay, detection apparatus and techniques, tracer procedures, safety precautions in agriculture, biology, medicine, nutrition, etc. Not for credit by chemistry or physics majors or minors. Prereq: Mathematics 122 or equivalent and two courses from the following: 100, 110, 120-130, 121-131, 128-138, Sp.

450 Advanced Organic Chemistry (3) Modern organic reactions of mechanism, synthetic, and theoretical interest. Content reflects current trends in the area. Prereq: 390, F.

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

473-483 Physical Chemistry (3,3) Students may not receive credit for both 473 and 473 or both for 483 and 483. Prereq and 369 or equivalent, and third laws of thermodynamics; chemical equilibria; simple phase equilibria, properties of solutions; introduction to statistical methods and techniques. Prereq: 130 or 138, Physics 231 or 222, and Mathematics 241. F.

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

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: 480 or 481 or 483, E.

CHILD AND FAMILY STUDIES (245)

110 Introduction to Early Childhood Education (3) History, philosophy, current issues, programs, program models, includes observations. F.

120 Human Development (3) Conception through adulthood in various social/ecological contexts; interrelationships among various aspects of development: physical, psychological, emotional, social, normative, nonnormative development. F, Sp.

211 Development in Infancy and Early Childhood (3) Development from conception through early childhood; interrelationships among cognitive, emotional, social, physical aspects of ontogeny; normative, nonnormative development. Includes observation. F.

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

220 Marriage and Family: Roles and Relationships (3) Emerging, declining roles, changing relationships among family members across life cycle from various theoretical perspectives. Prereq: 110 and 211 or consent of instructor. F.

240 Human Sexuality (3) Sexuality through cultural, social, personal, and biological perspectives. F.

312 Adulthood and Aging (3) Adult life in society from youth through elderly; adjustment to internal, environmental changes through adulthood; interrelationships among marriage, work, education, social, normative, nonnormative development. 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.

350 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.

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. Coreq: 400 or 200, and 3 lab. Prereq: 220, F.

352 Family, School, and Community Relations (3) Techniques for developing community relationships and advocating for children and families, including handi- capped and nonhandicapped individuals. Includes observation and physical participation. Prereq: Coreq 351 or HEED 220 or consent of instructor. Sp.

360 Family Stress (3) Family's response to stressful circumstances: skills for intervention into family systems; violence, abuse, divorce, illness, death. Prereq: 220 or consent of instructor. Sp.

368 Family Finance (3) Alternatives for meeting family financial responsibilities across the life-cycle. Prereq: 200 or consent of CFS major or consent of instructor. F.

400 Families: Ethnicity, Race, and Class (3) Cultural, socioeconomic, ethnic variations; emerging needs and programs. Prereq: 220, 350, Junior standing or consent of instructor. (Same as Afro-American Studies 420.) A, F.


440 Teaching in Community-Based Programs (3) (Same as Home Economics Education 440.) J.

450 Assessment in Early Childhood Programs (3) Historical, cognitive, social, language development in handicapped and nonhandicapped children birth to 5 years; early development, assessment. Includes supervised practicum in assessment. Prereq: 351 or consent of instructor. F.

451 Early Childhood Education III: Mainstreaming Exceptional Children (3) Individualized curriculum planning based on knowledge of normative, nonnormative development, assessment, effective teaching strategies for facilitating development. Includes participation. Prereq: 450, F.

460 Directed Study in Child and Family Studies (1-3) Individualized supervision of research, study, or classroom 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.

470 Student Teaching (15) Responsibility for planning and guiding groups of infants, toddlers, or preschoolers under supervision of faculty. Includes weekly seminar. Prereq: 450 and 451. Satisfactory/No Credit only. F, Sp, F. Sp and 470 student teaching begins on first day of registration and ends on last day of final examination period (student teaching follows the CDL calendar and does not include Spring break). Summer student teaching begins the day following Spring commence-
ment and ends on the day before Summer commencement.

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

475 Day Care Administration (3) Theories, methods, and materials for administrators of early childhood education programs: 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 practical 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 (8) 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, minor or major recognition by the instructor. May be repeated. Maximum 12 hours.

485 Special Topics in Child and Family Studies (1-9) Personal or professional interest in human development or family studies. Two topics may be taken as the latter half of the 3000 level. Prereq: 9 hours in Human Development and Family Studies, cumulative GPA of 3.0 or above, minor or major recognition by the instructor. May be repeated. Maximum 9 hours. F, Sp, Su

497 Honors: Child and Family Studies (3-6) Issues or topics affecting children and/or families, designed to meet the major or minor needs of the honors student. May be repeated. Maximum 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.)

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

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.)

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 how they reflect the early Greek vision of the universe and humanity's place in it. Origins and development of Greek myths and the rise of organized religion, from Bronze Age to about 450 B.C. Readings include Hesiod and Aeschylus. Writing emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

222 Classical Greek and Roman Mythology (3) Use of myth in literature, history, religion and philosophy of Greece and Rome from about 450 B.C. to about 350 A.D. Two topics are the latter half of the fifth century B.C. and the last quarter of the first century B.C. Includes Oriental intrusions into Greece and Rome, including early Christians, and the Graeco-Roman influence on Western thought. Prereq: English 101. Satisfactory/No Credit only. F, Sp

223 Archaeology and Art of Ancient Greece (3) 소개 of Greece and Rome from about 450 B.C. to about 300-100 B.C. For prehistoric times emphasis on architecture and artifacts used to recreate the culture of the Minoan and Mycenaean civilizations and that of the following Dark Age. For Archiac, Classical, and Hellenistic periods emphasis on development of architecture, sculpture, and fine painting. Includes minor arts and the relationship between archaeology and art. Writing emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

224 Archaeology and Art of Etruria and Rome (3) Survey of the archaeology of the Italian peninsula and the Roman World from early times to the fall of the Roman Empire (1000 B.C.-500 A.D.) Reconstruction of the Etruscan culture from tombs, paintings, and artifacts, development of Roman architecture, and urban planning in Rome and the provinces. Prereq: 232 or consent of instructor. Writing emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

225-254 Greek and Roman Literature in English Translation (3-3) Greek Literature. Major literature of ancient Greece from Homer to Menander, with emphasis on the sixth and fifth centuries B.C. 254-Roman Literature. Major literary works of the Romans from Plautus to Tacitus. How the Romans borrowed from the Greeks and then achieved their own artistic identity by the time of Vergil's Aeneid. Writing emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

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

313 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 effect on the Aegean World and Cyprus. Evidence for daily life, religion, trade, and foreign contacts. Architecture, wall paintings, and artifacts. Prereq: One of the following: 232, 381, ancient history (Ancient Near East or Ancient Greece), or consent of instructor. 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. Prereq: 331. Satisfactory/No Credit only. F

381 Greek Civilization (3) Major aspects of ancient Greek civilization: religion, fine arts, political life, Mediterranean relations, the prominence of Athens; the role of modern archaeology in interpretation; emphasis on the sixth and fifth 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, history, culture and daily life, emphasizing the late Republican 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 contribution of women in the apparently male-dominated society of classical Greece and Classical Rome. Evidence from literature, vase paintings, and other arts is examined. Includes early Republic and late Empire. Prereq: 382 A.D. with emphasis on Athens in the fifth century B.C. and Roman Italy in the first and second centuries A.D. (Same as Women's Studies 383.)

422 Seminar in Classical Studies (3) Field of Classical Studies today: recent achievements in the areas of both philology and archaeology; impact of the decipherment of Linear B; new understandings of the culture and politics of the "golden age" of Pergamum and Augustus.

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 Literatures (3) Literary perspectives and values of different time periods and cultures. Variable content. Writing emphasis course: at least one in-class essay examination per term. Prereq: 111 and 112. 3 hour lab required.

301 Computer Techniques for Literary Study (3) Computer research in literary study including writing programs in BASIC which have literary research applications. Prereq: 111 and 112. 3 hour lab outside the classroom.

302 Programming Using FORTRAN for Literacy Study (4) Problem solving, algorithms and algorithm development, introduction to programming using FORTRAN. Organization and characteristics of modern digital computers. Emphasis on developing good programming habits. Problem solving and algorithm development. Building abstracting with procedures and data. 100 and 102 may not both be taken for credit. 3 hour lab required.

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: 100 or 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.

113 Introduction to Programming Using COBOL (3) Computer programming in COBOL. File handling, disk data sets. Prereq: 100 or 101 or 102 or 111. 3 hour lab required.

203 COBOL (3) Computer programming in COBOL. Handling, disk data sets. Prereq: 100 or 101 or 102 or consent of instructor.


291 Lower-Division Special Topics (1-3) Topics vary. Prereq: 111, 112 and 311. May be repeated. Maximum 9 hours.

311 Discrete Structures (3) Propositional and predicate calculus; algorithms, graphs, trees. Prereq: Mathematics 222 and either 100 or 102.

320 Problem Solving (3) General approaches to problem solving, emphasis on formalizing intuitive hypotheses, rules and goals, generation of alternatives, and dealing with incomplete information. Prereq: 111 and 112 and 311. (Required core course for the Machine Intelligence concentration.) 3 hour lab required.

331 Digital Design (3) Logic design, microprocessors and microprocessor interfacing, interrupts. Prereq: 111 and 112. 3 hour lab required.

340 Introduction to Information Systems Design (3) Problem solving, algorithms, and programming in different information systems (e.g. data processing, management information and decision support systems). Advanced data structures, techniques, interfacing, support systems. Prereq: 111 and 112. 3 hour lab required.

360 Systems Programming (3) Linkers, loaders, multitasking, file manipulation and job control. Prereq: 111 and 112. (Required core course for the Computer Systems concentration.) 3 hour lab required.

371 Numerical Algorithms (3) Same as Mathematics 371.

380 Theory of Computation (3) Recursive functions, Turing machines, computability, halting problems, Godel theorem. Prereq: 111 and 112 and 311. (Required core course for the Theory of Computing concentration.)

381 Formal Languages (3) Grammars of the Chomsky hierarchy and their recognizers, Properties of languages and machines. Prereq: 111 and 112 and 311.

401 Applications of Computer Graphics (3) Commercial software, techniques, hardware. Prereq: 100 or 101 or 102. May not be taken for credit by Computer Science majors. 3 hour lab required.

402 Applications for Artificial Intelligence (3) Commercial software, techniques, hardware. Prereq: 100 or 101 or 102. May not be taken for credit by Computer Science majors. 3 hour lab required.

403 Applications of Microcomputers (3) Microcomputers, DOS, commercial software and hardware. Prereq: 100 or 101 or 102. May not be taken for credit by Computer Science majors. 3 hour lab required.

404 Applications of Database Systems (3) Commercial software, systems, techniques. Prereq: 100 or 101 or 102. May not be taken for credit by Computer Science majors. 3 hour lab required.

411 Senior Thesis I (3) Frontiers of computer-science technology and research. Students begin writing a senior thesis. Prereq: Senior standing. Writing emphasis course: at least one in-class exam 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.

421 Introduction to Artificial Intelligence (3) Introduction to AI languages. Basic techniques of heuristic search, gaming, and theorem proving. Prereq: 320. 3 hour lab required.

422 Expert Systems (3) Production rule model and its extension into many-valued and fuzzy logics. Deriving explanations, examples of expert system tools and building expert systems. Other methodologies—frames, scripts, decision expressions. Prereq: 421. 3 hour lab required.

423 Natural Language Processing (3) Phrase-structured and slot grammars, error-correcting interfaces and semantic interpretation. Applications to database and expert systems. Prereq: 381 and 421.

424 Robotics Software (3) Software for robotic control. Prereq: 331 and Mathematics 142. 3 hour lab required.

425 Functional Languages (3) Functional, applicative and object-oriented languages such as LISP and SMALLTALK and their applications. Prereq: 111 and 112 and Mathematics 222. 3 hour lab required.

432 Computer Graphics (3) Interactive computer graphics. Transformations, perspectives, shading, vector generation. Graphics hardware such as tablets and chips with goal of understanding techniques for designing computer systems for graphics capability. Prereq: 331. 3 hour lab required.

433 Computer Systems Architecture (3) Parallel processing, memory, I/O, pipelines, specialized architecture. Prereq: 331 and 360.

434 Networks and Communications (3) ISDN open system interconnection model, protocols, study of central existing wide area networks, local area networks. Prereq: 331 and 360.

435 Microcomputer Systems (3) Disk operating systems, peripherals, local area networks and communication protocols. Introduction to multiprocessor microcomputer systems. Prereq: 331 and 360. 3 hour lab required.

436 Computer Systems Hardware Design (3) Investigation of computer systems hardware, including bus structures, I/O devices, interrupt support software, direct memory access logic, timing budgets, and system considerations. Includes the construction, testing and debugging of either or both of a prototypesubsystem; a system based on commercially available microprocessor component devices. Prereq: 435. Includes 3 hour lab.

439 Microprogramming (3) Microprogramming concepts and techniques for control systems of large and small machines. Boolean algebra, finite state machines, etc. Prereq: 331. 3 hour lab required.

441 Science Information Systems (3) Design of scientific data banks, document repositories, information retrieval and electronic mail systems. Control and dissemination of scientific information at the national and international level. Prereq: 340.

442 Introduction to Database Management Systems (3) File searching and organization, hierarchical, network, and relational models, relational calculus and algebra, data definition and manipulation languages; implementation and security considerations; performance, integrity, and reliability issues; intelligent database systems. Prereq: 340 and 311.

443 Introduction to Information Storage and Retrieval (3) Information storage and retrieval, statistical, syntactic, and logical analysis of information content, evaluation of retrieval effectiveness. Prereq: 340.


451 Pattern Recognition and Analysis (3) Elements of syntactic pattern recognition, learning algorithms, decision procedures, characteristic rules. Prereq: 111 and 112. 3 hour lab required.

452 Image Processing and Analysis (3) Methods for digitizing, storing, processing, and displaying images. Image enhancement, restoration. Prereq: 451. 3 hour lab required.

460 Human Factors in Software (3) Interface between people and machines and the ease of use of software in the environment for which it is intended. Prereq: 111 and 112.


462 Software Engineering (3) Software design and application process from initial requirement and specification statement to coding, testing, implementation, and maintenance. Prereq: 111 and 112.

463 Introduction to Programming Languages (3) Study and comparison of programming languages and their environments. Human interfaces, formalisms, domain of applicability, marketplace in software. Prereq: 111 and 112.


465 Parallel Computation I (3) Examination of non-numerical algorithms for parallel computation, operating systems, design and classification of parallel processors, compilers, concurrent computation. Prereq: 433.


471 Numerical Analysis (3) Same as Mathematics 471.

472 Numerical Algebra (3) Same as Mathematics 472.

473 Computer Modeling and Simulation of Physical Systems (3) Interactive techniques for the simulation of various kinds of physical systems. Prereq: 111, 112 and 311; and Mathematics 371.

476 Management of Uncertainty in Computer Systems (3) Origins of uncertainty and methods for dealing with the various classes of uncertainty. Topics may include hazards in switching circuits, vagueness in natural language processing, approximate reasoning models. Prereq: 111, 112 and Mathematics 222.
Cultural Studies (270)

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

400 Selected Interdisciplinary Cultural Topics (1-12) Acceptable for credit in any cultural studies concentration or minor with the consent of the director of cultural studies and the respective chairperson. May be repeated for credit up to maximum of 12 hours.

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.

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.

Dance (274)

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

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

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

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

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

240 Tap: Level I (2) Instruction and practice in elementary tap dance techniques.

250 Composition I (2) Choreographic skills emphasizing form, content and music.

310 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 16 hours.

320 Jazz: Level II (2) Instruction and practice in intermediate jazz dance styles and techniques. Available to dance majors and minors or with consent of instructor. May be repeated. Maximum 12 hours.

330 Modern: Level II (2) Instruction and practice in intermediate modern dance techniques. Available to majors and minors or with consent of instructor. May be repeated. Maximum 12 hours.

340 Tap: Level II (2) Instruction and practice in intermediate tap dance techniques. Prereq: 240 or consent of instructor.

350 Composition II (2) Choreographic skills emphasizing design, use of costumes and props. Prereq: 250. 380 Special Topics (1-3) Selected disciplinary or professional areas of dance. May be repeated. Maximum 16 hours.

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

415 Teaching Creative Dance for Children (2) Theory, methods, materials and practical experience in the presentation and integration of creative dance in grades K-4 in the elementary school. Different level of performance is expected of those registered for graduate credit.

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

430 Modern: Level III (2) Instruction and practice in advanced modern dance techniques. Available to majors and minors or with consent of instructor. May be repeated. Maximum 16 hours.

450 Composition III (3) Application of choreographic and production skills culminating in the presentation of two works. Prereq: 350.

460 Rhythmic Analysis (3) Basic nature and principles of music, rhythm and rhythmic notation with emphasis on their correlation with dance movement and composition. Prereq: Consent of instructor. Senior standing or graduate status required. Different level of performance is expected of those registered for graduate credit.

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

480 Dance History through the 19th Century (3) Survey of the dance of various societies and cultures from pre-history through the nineteenth century. Senior standing or graduate status required. Different level of performance is expected of those registered for graduate credit.

481 History of Dance II (3) Survey of the development of dance in theater, recreation and education during the 20th century. Senior standing or graduate status required for graduate credit. Different level of performance is expected of those registered for graduate credit.

496 Dance in the 20th Century (3) Survey of history and philosophy of dance in the 20th century. Senior standing or graduate status required for graduate credit. Different level of performance is expected of those registered for graduate credit.

498 Physical Rules (3) Instruction and practice in advanced modern dance techniques. May be repeated. Maximum 9 hours.

500 Independent Study in Dance (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.

670 Environment and Conservation (2) Introduction to the study of the broad concepts of interrelationships of living things and their environment. 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, theory of wage differentials, 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.


361 Regional and Urban Economics (3) Overview of regional differences. Theory of industrial and agricultural location and human migration. Economic basis for land use patterns, central places, and urban form, regional and urban structure, growth, and methods of regional and urban analysis. Prereq: 201.

381 Econometrics (3) Methods of specification, estimation, testing and forecasting of economic relationships. Includes specification of models, estimation methods, statistical inferences of empirical results, forecasting procedures and common econometric problems, such as multi-collinearity, heteroscedasticity, and serial correlation. Prereq: 201. Statistics 201, Statistics 202.

388 Special Topics (1-3) Topics vary. Prerequisites determined by department each time course is offered. Prereq: Numerical grade is given to law students. Prereq: 201.

413 Macroeconomic Fluctuations (3) Analysis of historical data, methods of analyzing macro-economic fluctuations, theoretical explanations of cycles, and the role of monetary and fiscal policies in the aggregate economy. Prereq: 312 or consent of instructor.

415 History of Economics (3) Methods of study of doctrinal history. Origins and evolution of major doctrines. Classical and Neoclassical schools, theory of capital and interest, the institutional approach. Prereq: 201 and consent of instructor.
210 Career and Personal Development (3) Systematic instruction to facilitate career development and life planning. E
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 (3) Practice in acquiring knowledge and skill in areas such as interpersonal relations, career decision-making, personality and social awareness. Individual and small-group format. May be repeated twice. Satisfactory/No Credit only. E
315 Psychology of Learning and Classroom Management for Teachers (3) Understanding and application of the psychological learning and classroom management to the teaching/learning processes in educational settings. Prereq: 210 or equivalent admission to Teacher Education Program. (Same as Education 315.) F
325 Principles of Educational Test Construction for Teachers (2) Construct classroom tests for diagnosis and evaluation of student learning needs and for evaluating mastery of subject matter. Prereq: 315 and admission to Teacher Education Program. (Same as Education 325.) Sp
404 Special Topics (1–3) A course that of interest to the department on various topics of current interest. Contact the Department of Pre-prerequisite: Department's permission. Prereq: Department's permission. Prereq: 210 or equivalent admission to Department's permission. (Same as Educational and Counseling Psychology.) F or S
424 Studies in Elementary Education (1–3) Variable topics related to educational areas such as interpersonal relations, career decision-making, personality and social awareness. Prereq: Admission to Teacher Education Program. (Same as Educational and Counseling Psychology.) F or S
435 Personality and Mental Health (3) Perspectives of psychology or mental health with applications to education and other social institutions. E
432 The Disadvantaged Student: Psychoeducational Perspectives (3) Theory and research regarding etiology, psychosocial behavior and appropriate intervention. E
450 Self-Management in the Helping Professions (3) Applications of self-management strategies to careers, social, emotional and health domains for both helping professionals and their clients. Prereq: Introductory course in psychology or permission of instructor. E
483 Independent Study (1–15) Independent investigation of problems in undergraduate and graduate psychology. May be repeated. Maximum 15 credit hours. E

EDUCATIONAL CURRICULUM AND INSTRUCTION (301)
141 Efficient Reading and Study Skills (2) Development of reading comprehension and rate, intensive vocabulary and study skills related to the reading of class materials. Prereq: Admission to Teacher Education Program. F, Sp
204 Field Study in Education (1–3) Students of professional preparation in the College of Education. Prereq: Admission to Teacher Education Program. Satisfactory/No Credit only. E
302 School and American Society (3) (Same as Educational Curriculum and Instruction 402.)
303 Teacher Effectiveness and Curriculum Design (1) (Same as Educational Curriculum and Instruction 402.)
304 Microcomputers and Instructional Design (1) (Same as Educational Curriculum and Instruction 402.)
305 Psychology of Learning and Classroom Management for Teachers (3) (Same as Educational and Counseling Psychology 315.)
325 Principles of Educational Test Construction for Teachers (2) (Same as Educational and Counseling Psychology 315.)
370 Survey of Exceptional People (2) (Same as Special Education 370.)

EDUCATIONAL AND COUNSELING PSYCHOLOGY (311)
210 Psychology of Human Development for Teachers (3) Understanding and application of the psychology of human development to teaching/learning processes in educational settings. Prereq: admission to Teacher Education Program. (Same as Educational and Counseling Psychology 315.)
434 Topics in Reading Education (1-6) May be repeated. Maximum 6 hours. 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 elementary school mathematics. Permission of Mentor. 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; relationship of kindergarten to total elementary school. Prereq: Admis- sion to Teacher Education Program. E

451 Education in Cultural Perspective (3) Contribution of anthropological concepts to understanding of educational processes; major conceptual frameworks; collation ethnographic research on process of school- ing. F

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

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

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, material 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 integration of content areas in local public schools. Prereq: 410 and admission to Teacher Education Program. Satisfaction/No Credit only. C

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

473 Student Teaching in the Elementary School (3-10) Semester Student to Educational Curriculum and Instruction 4810 or 4820. Intended for students in the four year program or equivalent. Not to be substituted for Educational Curriculum and Instruction 471. Internship 1 or 472: Internship II. Prereq: Admission to Teacher Education Program, permission of Mentoring Team, and 203 (1). Satisfaction/No Credit only.

474 Student Teaching, Grades 7-12 (3-10) Semester Student 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 451: Internship I or 482: Internship II. Prereq: Admission to Teacher Education Program, permission of Mentoring Team, and 203 (1). Satisfaction/No Credit only.

475 Utilization of Instructional Media (3) Basic communication process, need for instructional media, in- structural 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 development of the elementary school classroom. Media Lab experience in production of AV soft- ware. F, Su

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

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) Prepara- tion 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) Class- room uses of computers, applications for teaching; overview of computer operation and software for teachers of all grades. F, Sp

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

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

496 Teaching Science Grades 7-12 (3) Methods, mate- rials, recent trends in science and environmental educa- tion programs for secondary schools. Prereq: Admis- sion to Teacher Education Program. F, Sp

ENGINEERING AEROSPACE (018)

345 Aerospace Engineering Instrumentation and Measurement (3) Fundamentals of measurement systems; standards; dynamic characteristics of instruments; stastical data treatment; transducers; signal condition- ing; strain, pressure, temperature and flow measure- ments. Prereq: 362 or Mech. E. 363, Mech. E. 341, ECE 301, F, Sp


362 Dynamics/Vibrations (3) Central force motion, transfer orbits, free and forced vibrations of single and multiple degree vibrating systems. Prereq: E&M 321. F


401 Thesis (3) Problem investigation and report. Pre- req: Senior standing. F, Sp

422 Aerodynamics (3) Theory and design of aerody- namic bodies for desired characteristics. Potential flow theory, viscous effects, compressibility effects. Sub- sonic, transonic and supersonic flight. Prereq: 370. F

423 Viscous Flow (3) Boundary layer theory, laminar and turbulent flow; compressibility effects; numerical solution methods. Prereq: 351 and Mech. E. 391. Sp


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


429 Aeropace System Design (4) Synthesis and de- sign and implementation of aerospace system including eco- nomic and technical aspects. Participation in team design effort including formal presentations and design report. Prereq: 425, 426. Sp

431 Mechanical Engineering/Aerospace Engineer- ing Seminar (1) Topics related to engineering including ethics. Formal oral presentations by students on engi- neering topics. Prereq: Spot.

449 Aerospace Engineering Laboratory (3) Design- ing, conducting, and reporting results of experimental exercises. Test standards and specifications. Analysis of data and interpretation of conclusions. 3 hours lab per week. Prereq: 345, 351. F

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

ENGINEERING BASIC (179)

100 Seminar (1) Overview of the College, engineering as a profession, engineering ethics. Consideration of each major and the various engineering disciplines. Satisfactory/No credit.


111 Fundamentals of Engineering Graphics (3) Tech- nical sketching, geometric construction with emphasis on plane surface analysis; presentation of engineering data; graphical solution of three dimensional space problems; primary and secondary auxiliary views. Ap- plication of Computer-Aided Design and Drafting (CADD) in solving engineering graphics problems. Two three- hour periods or three two-hour periods, including one hour of lecture per week.

121 Statics (3) Vectors, forces and moments; equiva- lent force systems; free body diagrams, equilibrium, frames, braces and friction. Coreq: Math 141.

131 Particle Dynamics (3) Kinematics, simple har- monic motion; kinetics, Newton's laws, work-energy, impulse-momentum; impact. Prereq: 121; Coreq: Math 142.


ENGINEERING CHEMICAL (226)


240 Fluid Flow and Heat Transfer (3) Force, energy and mechanical energy balances; flow in tubes, piping systems, packed and fluidized beds; pumping and me- ttering; steady and unsteady state heat conduction; heat transfer in tubes and heat exchangers; radiation. Pre- req: 200, Mathematics 231.

310 Chemical Engineering Laboratory (3) Thermody- namics, fluid flow and heat transfer in chemical engi- neering. Prereq: 240.

330 Chemical Engineering Thermodynamics (3) Basic concepts and chemical engineering applications of thermodynamics, emphasis on flow processes, real gases, estimation of properties, phase equilibria and chemical equilibria. Prereq: 240, Chemistry 371.

340 Mass Transfer and Separation Processes (3) Stagewise operation; application of analytical, graphical
ods, capital investment, discounted cash flows, net present value; Coreq: 440.
485 Hydrocarbon Processing (3) Chemical and physical properties of crude petroleum and processes utilized in conversion of raw material into various fuels and liquid fuels; Prereq: 340.
486 Coal Processing to Liquid Fuels (3) Characterization of various coals with respect to current gasification and liquefaction technologies; modeling of conversion processes; process design of product yields and the associated water, oxygen, and energy requirements; catalytic hydrogenation and reactor design considerations; economic assessments. Prereq: 485.
494 Special Problems in Chemical Engineering (3) Chemical engineering problems related to recent developments in industrial practice or engineering research. Prereq: Consent of instructor. May be repeated. Maximum credit 6 hours.

ENGINEERING CIVIL (254)
210 Engineering Surveys (3) Measurement through application of surveying instruments and calculation of error in their analysis; concepts of horizontal, vertical and angular measurements and control; construction surveys; and route surveys. Three theoretical and horizontal curves. Prereq: Sophomore standing.
251 Transportation Engineering I (3) Transportation problems and perspectives, rural and urban; use of a systematic planning process; analysis of existing travel patterns; modeling and demand, development of alternatives and the evaluation of civil engineering projects. Civil engineering system making and applications of economic analysis. Prereq: Sophomore standing.
261 Structural Analysis I (3) Reactions; and shear and moment diagrams; forces in trusses; uniaxial stress and strain; area moments of inertia, torsion. Prereq: Basic Eng. 121.
305 Seminar (2) Selected topics including historical and modern civil engineering achievements; professional and ethical responsibilities. Prereq: Senior standing and completion of all junior level non-engineering courses. Coreq: 340.
308 Transportation Problems and Control (3) Process and control systems simulation and advanced analytical and computer methods to the design of dynamic systems; statistical process control; optimization techniques.
330 Transportation Engineering II (3) Transportation engineering and operations, and maintenance of highway facilities; includes various design and construction components. Topics vary; but include problems typical of those designed by Civil Engineering consulting firms. Prereq: Completion of all technical courses through junior year.
335 Earthquake-Resistant Structures (3) Same as Architecture 435.
346 Elementary Structural Matrix Methods (3) Same as Architecture 436.
349 Foundation Engineering (3) Fundamentals of geo-technics applied to design and analysis of soil-struc- ture systems; subsurface investigation; design of shallow and deep foundations; foundation on rock. Lateral earth pressure and retaining structures. Analysis of homogeneous slopes. Prereq: 330.
441 Civil Engineering Systems Design and Manage- ment (3) Methods of data analysis and modeling of civil engineering systems to enhance resource allocation for specific application to problems of transportation, envi- ronmental, water resources, structural analysis material. Emphasis on micro-computer applications. Prereq: Junior standing or consent of instructor.
442 Construction Methods and Equipment (3) Funda- mental operations in construction and equipment selec- tion; construction procedures for roads, bridges and steel construc- tion; and construction contracts and economics. Prereq: 330.
451 Highway Engineering (3) Design, construction, operation, and maintenance of high-traffic highways; in- cludes application of various engineering principles and techniques to process of planning, locating and design of highway facilities; covers both geometric and pave- ment design. Prereq: 210, 251, 352.
452 Traffic Engineering (3) Characteristics of driver, vehicle, and roadway and their interrelationship; traffic studies; basic considerations of traffic circulation and control, lighting, capacity analysis and design. Prereq: 210, 251, 352.
453 Airport/Railroad Planning and Design (3) Airport master planning and engineering. Runway configuration, airfield capacity, geometrics and terminal layout and design. Railroad capacity, geometrics and system layout and design. Prereq: 210, 251, 352.
461 Analysis of Framed Structures (3) Maximum stress and strain due to imposed loading; ideas of influence lines; lateral forces due to earthquake and wind; analysis of portals, building frames, and space frames; matrix methods; use of computer in structural analysis. Prereq: 361.
471 Introduction to Structural Design (3) Selection of rolled structural steel beams, design of structural steel members for axial tension and compression loads, rein- forced concrete beams; use of standard specifications. Prereq: 361.
472 Steel Design (3) Design of plate girders and com- posite beams; consideration of members subjected to differential operations; application of analytical and computer methods to the design of diffu- sive processes. Applications include gas absorption, distillation, distillation, ion exchange and membrane separations. Prereq: 330.
360 Process Dynamics and Control (4) Introduction to process modeling and industrial control system design. Mathematical modeling and characterizing dynamic behavior of processes; theory and practice of operating and controlling such systems. Includes laboratory work. Lab. Prereq: 261, Math 241.
380 Seminar (1) Presentation and discussion of topics in the practice of chemical engineering. Satisfactory/No credit.
401 Chemical Engineering Data Analysis (3) Analysis of experimental data; identification of system extremes; statistical properties of samples; empirical modeling of processes; statistical process control; optimization tech- niques.
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 II (3) Labora- tory investigations of mass transfer and chemical reaction phenomena in chemical engineering. Prereq: 440, 441.
415 Computer Applications in Chemical Engineer- ing (3) Introduction to computer solution of chemical en- gineering problems. Primary focus on the application of personal computer programs. Includes flow sheet simu- lators, statistics, spreadsheets, graphics and process modeling.
440 Transport Phenomena (3) Overview of momentum, heat and mass transfer processes, the analogies, for financial and sensitivity analyses. Prereq: 240.
440 Transport Phenomena (3) Overview of momentum, heat and mass transfer processes, the analogies, for financial and sensitivity analyses. Prereq: 240.
369 Plasma Engineering Lab (0) Experiments and projects demonstrating plasma engineering concepts discussed in 361. Coreq: 361.


409 Digital Signal Processing and Filter Design Lab (0) Experiments and projects demonstrating digital signal processing and filter design discussed in 405. Coreq: 405.


422 Machines (3) Dynamic behavior of rotating machines including design and operation of d.c. machines; response to different waveforms in supply; describing equations for a.c. machines and their linearized models. Coreq: 421. Design content: 1 hour. Prereq: 421.


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: 425.

426 Machines Lab (1) Experiments and projects demonstrating machines discussed in 422. Coreq: 423.

429 Power Electronics Lab (1) Experiments and projects demonstrating power electronics discussed in 422.

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 GaAs gates and arrays; design concepts for op-amps, comparators, references, regulators, and other linear functions. Design content: 2 hours. Prereq: 431.

435 Digital and Analog Integrated Electronics Lab (2) Variations and experiments in demonstrating electronics design.
 conversion techniques; quad and R-2R ladder networks.

Data Acquisition Systems (4) Digital-to-analog converters; device service routines; signature analysis. Design content: 1 hour. Prereq: 361 or 461 or consent of instructor.

Introduction to Fusion Energy (1) High-temperature plasma physics relevant to fusion plasma, principles of fusion reactors, and engineering and physics constraints on fusion reactors. Prereq: 361 for ECE majors, or consent of instructor. (Same as Nuclear Engineering 463.)

Introduction to Fusion Energy (2) (Continuation of 463.) Includes principles and phenomenology of tokamak and stellarator magnetic confinement concepts, advanced fusion fuels, fusion technology, plasma engineering, and fusion reactor design studies. Includes design projects. Prereq: 361. Design content: 2 hours. Prereq: 463 or consent of instructor. (Same as Nuclear Engineering 464.)

Plasma Laboratory (1) Experiments and design projects; instrumentation covered in 461, 462, 463, and 464. Design content: 1 hour.


Electro-Optics I Lab (1) Experiments and projects demonstrating electro-optics discussed in 481. Coreq: 481.

Special Problems in Electrical Engineering (1-3) Problems in Electrical Engineering involving library and experimental research. May be repeated. Maximum 6 hours. Prereq: Consent of instructor.

Senior Seminar (1) Discussions, lectures and trips to industry illustrating material covered in 461, 462, 463, and 464. Design content: 1 hour. Prereq: Junior standing.

Production Facilities Design and Material Handling (3) Design of facilities for such diverse groups as hospitals, banks, and industry. Prereq: 302, 451.

Senior Seminar (2) (Same as Nuclear Engineering 464.)

Project-oriented using a microcomputer kit having a circuit and electronics discussed in 443. Project oriented using a microcomputer kit having a circuit and electronics discussed in 443.

Circuit and electronics discussed in 443.

Prereq: Senior standing or consent of instructor.

Production Facilities Design and Material Handling (3) Design of facilities for such diverse groups as hospitals, banks, and industry. Prereq: 302, 451.

Senior Seminar (1) Discussions, lectures and trips to industry illustrating material covered in 461, 462, 463, and 464. Design content: 1 hour. Prereq: Junior standing.

Production Facilities Design and Material Handling (3) Design of facilities for such diverse groups as hospitals, banks, and industry. Prereq: 302, 451.

Senior Seminar (2) (Same as Nuclear Engineering 464.)

Project-oriented using a microcomputer kit having a circuit and electronics discussed in 443. Project oriented using a microcomputer kit having a circuit and electronics discussed in 443.

Circuit and electronics discussed in 443.

Prereq: Senior standing or consent of instructor.

Production Facilities Design and Material Handling (3) Design of facilities for such diverse groups as hospitals, banks, and industry. Prereq: 302, 451.

Senior Seminar (1) Discussions, lectures and trips to industry illustrating material covered in 461, 462, 463, and 464. Design content: 1 hour. Prereq: Junior standing.

Production Facilities Design and Material Handling (3) Design of facilities for such diverse groups as hospitals, banks, and industry. Prereq: 302, 451.

Senior Seminar (2) (Same as Nuclear Engineering 464.)

Project-oriented using a microcomputer kit having a circuit and electronics discussed in 443. Project oriented using a microcomputer kit having a circuit and electronics discussed in 443.

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Senior Seminar (1) Discussions, lectures and trips to industry illustrating material covered in 461, 462, 463, and 464. Design content: 1 hour. Prereq: Junior standing.

Production Facilities Design and Material Handling (3) Design of facilities for such diverse groups as hospitals, banks, and industry. Prereq: 302, 451.
141 Laboratory and Methodology in Human Factors Engineering (3) Project and laboratory-oriented investigation of human factors problems. Instrumentation and measurement of human capabilities and limitations, environmental factors that affect work such as temperature, humidity, lighting and noise. Measurement of task loading effects and effects of interface design on human performance. 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. Emphasizes informational aspects of IE system. Study of data structures and database management systems. Prereq: 200 and senior standing.

422 Special 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.


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

ENGINEERING MATERIALS SCIENCE (638)

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


302 Mechanical Behavior of Materials (3) Loading behavior for ceramics, polymers and metals; standardized tensile testing procedures; analytical treatment of stress, strain, and constitutive equations; theory of failure for ductile materials; analytical linear elastic fracture mechanics. Prereq: 201, sophomore mathematics, E&M 331 or 332 (Steele as Engineering Science and Mechanics 323.)

303 Thermodynamics of Solids (2) Applications to solids of free energy; activity; Raoult’s and Henry’s laws; gas-solid equilibria; adsorption, evaporation; solidification; surface tension; solubility; failure criterion; multicomponent systems. Prereq: Chemistry 371. Ed.

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


340 Introduction to Polymer Science and Engineering (5) Phenomenology of polymer systems; polymerization kinetics; molecular characterization; crystallization and glass transitions; crystallization kinetics; melting; mechanical properties; rheology and processing. Prereq: 201. F.


360 Introduction to Ceramic Materials and Processing (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.

421 Mechanical Metallurgy (3) Brittle fracture due to metallurgical and environmental factors; stress-life and stress rupture fatigue. Residual stresses; creep and stress-rupture; finite plastic strain; ductile fracture; fabrication by forging, rolling, deep drawing, stretch forming; formability testing. Preq: 302 and MEE 466.

422 Mechanical Process Design (3) Application of crystal structure, their mechanical, electrical, and optical properties. Ceramic fabrication processes from the initial green body fabrication through the firing state. Prereq: 201.

423 Metallurgical Fabrication (3) Principles and processes of welding, casting and powder metallurgy; solidification, segregation, heat flow, microstructure, residual stresses; creep and stress-rupture. Non-destructive testing. Prereq: 320 (3 hours or 2 hours and 1 lab.) Sp.


425 Metalurgical Applications in Manufacturing and Processing (3) Fabrication methods and standards and specifications of structural, packaging, and functional components. Mechanical processing for finished and semi-finished products; casting; forming, fusing, heat treatment, powder metallurgy, corrosion control. Preq: 201.

442 Mechanical Properties of Polymers (3) Deformation in the amorphous and crystalline states; isotropic and anisotropic properties; phenomenological and molecular interpretations. Rubber elasticity; thermodynam- ics and mechanical behavior in terms of the statistics of networks. Yielding and crazing. Fiber drawing; structural models, technology, characterization. Polymer superposition principle; time-temperature superposition. Internal friction. Prereq: 302. 340 or consent of instructor. F.

443 Polymer Processing (3) Rheological measurements; flow through tubes and slits; including end effects and extrude swell; selected applications, including screw extrusion, injection molding, synthetic fibers, including structure development, properties. F.

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

470 Corrosion Science and Engineering (3) Mechanisms and control of corrosion and degradation processes; thermodynamics and electrode kinetics of corrosion reactions; electrochemical measurement techniques; applications to materials. Prereq: 201. Recommended for chemical engineering, mechanical engineering, civil engineering and science and mechanics majors. F.

471 Semiconductor Materials (3) Theory, properties and processing of semiconductors with emphasis on applications to solid-state devices; basic physics of semiconductors; materials; crystal growth, doping, annealing, etching, property and performance evaluation. Preq: 313. F.

472 Fundamental Principles of Composite Materials (3) Physical principles basic to the design, manufacture and application of fiber reinforced polymers, metals and ceramics. Preq: 302 or equivalent. (Same as Engineering Science and Mechanics 426.)

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

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

491 Materials Design I (4) Analysis of materials requirements and performance. Engineering materials; selection and properties of materials. Preq: Senior standing or consent of instructor.


494 Special Project Laboratory (1-3) Group or individual investigation of problems related to materials science and engineering. May be repeated once. Preq: Senior standing or consent of instructor.

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

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

ENGINEERING MECHANICAL (650)

331 Thermodynamics I (3) Energy and laws governing energy transformations; thermodynamics; thermodynamic cycles; applications to engineering problems. Preq: Chemistry 130, and Mathematics 231. F, Sp, Su.

332 Thermodynamics II (3) Properties of gases and mixtures; chemical reactions; ideal and non-ideal fluid mixtures; chemical thermodynamics to metallurgical processing. Preq: 331. F, Sp, Su.

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


454 Mechanical Engineering Instrumentation and Measurement (3) Fundamentals of measurement systems; standards; dynamic characteristics of instruments; statistical data treatments and trend analysis; signal conditioning; strain, pressure, temperature and flow measurements. Coreq: 363, Preq: 341, ECE 301. Sp.


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 systems; factors and methods of storage; selected applications. Prereq: 332, 344 or consent of instructor.

475 Thermal Engineering (3) Thermal systems with emphasis on thermoeconomics, heat exchangers, combustion and system analysis and design including second law analysis. Coreq: ES&M 321. Prereq: 344, F, Sp, Su.

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


494-495 Selected Topics in Mechanical Engineering (1,1-4) Problems and topics related to developments and practice in mechanical engineering. Prereq: Consent of instructor. F, Sp, Su.

ENGINEERING NUCLEAR (716)

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

203 Thermodynamics I (3) First law analysis of open and closed systems; ideal gases and real fluids. Prereq: Mathematics 142.

204 Thermodynamics II (3) Second law, development of entropy concept and availability. Various power plant cycles 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: 302.

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 reactor systems. Prereq: 304. Coreq: 306.

306 Designing for Energy Transport (3) Radiation heat transport; hydrodynamics and heat transport in boiling and condensing systems; boiling crisis; fuel element and heat exchanger thermal design; steam generator design. Prereq: 305.

310-311 Thermalhydraulics (3,3,3) Energies and the manner in which they are transferred and transported. First and second laws of thermodynamics with applications to power cycles, transfer of heat through conductive and radiative mechanisms; and development of fluid flow principles for the transport of energy. Prereq: Mathematics 241.

341 Fluid Mechanics I (3) Fundamental laws of fluid mechanics, including hydrostatics, momentum, and energy; applications to fluid machinery; heat transfer processes; heat conduction, thermoelectric, and thermoelectric generation. Prereq: 342. Coreq: 304.

342 Thermodynamics (3) Fluid statics; conservation equations of mass, momentum, and energy; applications to fluid machinery; heat transfer processes; heat conduction, thermoelectric, and thermoelectric generation. Prereq: 341. Coreq: 304.

343 Heat Transfer (3) Thermal systems; solar energy utilization; application of heat transfer principles to design, analysis and selection of components. Prereq: 342.

401 Nuclear Reactor Theory (3) Thermal spectrum computational methods; heterogeneous effects in fast and thermal spectra; considerations in reactor core design; equations that relate thermal and neutronic variables; power distribution calculations and reactivity control methods. Prereq: 342.

402 Nuclear System Design (3) First order design and analysis of a nuclear system; interface with non-nuclear aspects of system design including system reliability and economics, class project. Prereq: 401.
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 and Media Studies 240).writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.


355 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.

363 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—transitions to the structure of modern English. (Same as Linguistics 372.)

376 Colloquium in Literature (3) Methods and objectives of literary study; 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, folksong, myth, legend, proverb, riddle, superstition, dance, games, and architecture.

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

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.

401 Medieval Literature (3) Reading and analysis of selected medieval literary masterpieces in modern English. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

402 Chaucer (3) Reading and analysis of the Canterbury Tales and Troilus and Criseyde in Middle English.

404 Shakespeare I: Early Plays (3) Shakespeare's dramatic achievement before 1601. Selected plays from the romantic comedies (e.g., Twelfth Night), the English histories (e.g., Henry IV) and early tragedy (e.g., Hamlet).

405 Shakespeare II: Later Plays (3) Shakespeare's dramatic achievement between 1601 and 1613. Selectors from the romantic comedies (e.g., Othello), the problem plays (e.g., Measure for Measure), and the dramatic romances (e.g., The Tempest).

406 Renaissance Drama (3) English theatre between 1590 and 1640. Representative plays by Shakespeare's contemporaries (e.g., Marlowe, Webster, Jonson).

409 Spenser and his Contemporaries (3) Principal achievements in prose and poetry of sixteenth-century authors such as Spenser, Wyatt, Marlowe, 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 MacFrieleope, Rape of the Lock, Gulliver's Travels, and Rasselas.

412 British Drama from 1660 to 1800 (3) Playwrights from Dryden and Wycherley to Goldsmith and Sheridan, including formal developments such as heroic play, comic comedy, affective tragedy, and exemplary drama.

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

414 Romantic Poetry and Prose I (3) Emphasis on Wordsworth, Coleridge, and Blake, with readings from Lamb, De Quincey, and other prose writers.

415 Romantic Poetry and Prose II (3) Emphasis on Keats, Shelley and Byron, with readings from Hazlitt, Peacock, and other prose writers.

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

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

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

422 Women Writers in England (3) Emphasis on the intellectual consciousness and works of British women writers in the nineteenth and twentieth centuries. (Same as Women's Studies 422.)

431 Colonial, Federal, and Early National American Literature (3) Colonial, federal and early national American literature from Columbus to Washington Irving.

432 American Romanticism and Transcendentalism (3)

433 American Realism and Naturalism (3)

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

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

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

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

442 American Humor (3) Development of American humor from the early nineteenth century into the twentieth century, with particular emphasis on Mark Twain.

443 Topics in Black Literature (3) Contents vary according to particular genres, authors, or theories from 1845 to the present, including Langston Hughes and the Harlem Renaissance, Richard Wright and Gwendolyn Brooks, writing by Black women, international Black literature in English, and Black American autobiography.

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

452 Modern British and American Drama (3) O'Neill's works as well as major dramatists, such as Williams, Miller, Albee, and representatives of Black theater, like Bullins and Baraka.

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

454 Twentieth-Century International Novel (3) Such authors as Camus, Duras, and others.

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

456 Professional Writing (3) Principles and practices of writing for publication. Dissertations, theses, articles, and reports in science and technology. Prereq: 459 or consent of instructor.

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

460 Technical Editing (3) Editing technical material for publication. Principles of style, format, graphics, layout, and production management. Prereq: 456 and 459, or consent of instructor.

463 Advanced Poetry Writing (3) Development of skills acquired in basic Writing Poetry course. Prereq: 363 or consent of instructor.

464 Advanced Fiction Writing (3) Development of skills acquired in basic Fiction Writing course. Prereq: 364 or consent of instructor.

471 Sociolinguistics (3) Language in relation to society. Empirical and theoretical focus. Emphasis on large-scale units: tribes, nations, social groups. Prereq: 371 or 372 or a satisfactory grade in a College of Arts and Science special consent of instructor. (Same as Linguistics 471 and Sociology 471.)

472 American English (3) Phonological, morphological, and syntactic characteristics of major social and regional varieties of American English, with emphasis on major phonological characteristics of English. Teaching grammar and phonology to native speakers with some attention to contrastive analysis of English with other languages. Prereq: Second year of a foreign language. (Same as Linguistics 472.)

475 Teaching English as a Second or Foreign Language (3) Second language acquisition theory. Issues in teaching the four language skills to learners of English. Materials and methods of language teaching and testing with emphasis on preparation of materials. Observation and teaching practicum. Prereq: 474 or consent of department. Maximum 6 hours. (Same as Linguistics 475.)

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

481 Studies in Folklore (3) Topic varies. May be repeated with different topic. Maximum 6 hours.

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

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

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

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

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

489 Special Topics in Film (3) Content varies. Particular directors, film genres, national cinema movements, or other topics. May be repeated with consent of department. Maximum 6 hours. (Same as Cinema Studies 489.)

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

492 Off-Campus Study (1-15) Seeing, studying, and writing about drama as performed in New York City.
493 Independent Study (1-15) Tutorial in subjects not regularly offered. May be repeated. Maximum 15 hours. Prereq: Consent of instruc-

tor. E

442 Special Topics In Food Technology and Science (1-3) Topics of current concern to the food industry. May be repeated. Maximum 9 hours. Prereq: Consent of instruc-
tor. F, S

450 Dairy Products II (3) Procurement, processing and distribution of fluid milk. Manufacture of butter, frozen and condensed dairy products. Prereq: 140 or consent of instructor. 2 hours and 1 lab. F

451 Dairy Products II (3) Manufacture of cheese and specialty products. Market standards and grading of dairy products, defects and spoiled products. Effect of processing methods on product characteristics. Prereq: 360 or consent of instructor. 3 hours and 1 lab. F

460 Meat Products Technology (4) Processing methods for meat curing, seasoning and developed and frozen products. Effect of processing methods on product characteristics. Prereq: 360 or consent of instructor. 3 hours and 1 lab. F

470 Food Crop Products (3) Food products from plants emphasizing types, manufacturing systems, quality, attributes and utility. Prereq: 3 hours Biological Science. 2 hours and 1 lab. Sp-E

480 Cereal Science and Bakery Products (3) Chemistry and technology of processing cereal grains; interactions of ingredients during production and storage of baked products. Prereq: 410 or 411 or equivalent. 2 hours and 1 lab. F-O

493 Independent Study (1-12) Specialized research in areas of interest under faculty direction. Field experience in supervised internship in the food industry. May be repeated. Maximum 12 hours. Prereq: Consent of instruc-
tor. E

FORESTRY (396)

301 Forest and Wildland Resource Economics (3) Production functions, supply-demand and market analysis; non-market programs and projects; economic anal-

ysis and decision models, investment and financial analysis; managerial economics; taxes; forest products mar-

keting. Prereq: 324 or consent of instructor. F

321 Forest Recreation (3) Philosophical foundation of recreation; planning, development, and management of forest recreation resources; interpretation of forest re-

sources. Overnight weekend field trips may be required. F

322 Applied Silviculture (3) Application of silvicultural techniques; tree improvement; use of herbicides; fire management. Prereq: Forestry, Wildlife and Fisheries 312, Coreq: 322, 324, 325, and Entomology and Plant Pathology 306. Sp


324 Forest Resource Analysis (3) Growth and yield prediction; harvest determination; goal setting under multiple use concepts; approaches to regulation; financial aspects of forestry with computer simulation. Prereq: Forestry, Wildlife and Fisheries 303. Coreq: 322, 324, 325, and Entomology and Plant Pathology 306. Sp

325 Forest Resource Inventory and Surveying (3) Volume and growth estimation; timber appraisal; surveying techniques; road layout and construction as applied to forestry; inventory; inventory reports. Prereq: Forestry, Wildlife and Fisheries 313. Coreq: 322, 323, 324 and Entomology and Plant Pathology 306. Sp

331 Wood Properties and Uses (2) Fundamental structural and physical properties and uses of wood. Prereq: Botsy 110 or consent of instructor. Coreq: Coreq: 323 for Forestry and Wood Utilization majors. Sp

332 Wood Identification (1) Macro and micro identifi-

cation to species of commercial softwoods, hardwoods, and foreign woods. Prereq: Forestry, Wildlife and Fish-

eries 311 or consent of instructor. Coreq: Coreq: 331 for Forestry and Wood Utilization majors. 1 lab. Sp

422 Forest and Wildland Resource Policy (3) Policy and legislative criteria for the management and utilization of forest and wildland law and regulation; theory of conflict resolution; formal and informal resolution. Prereq: Senior standing.

423 Forest Recreation Planning and Management (3) Planning processes, master and site planning, site design projects; management strategies, methods of
social perspectives and attitudes concerning natural resources and their use; techniques of integrated natural resource management, ecological principles, current policies, social trends, and forest and wildlife resource use. Day-long field trips may be required.

250 Conservation (3) Use and abuse of wildlife resources; ecological perspectives and attitudes concerning natural resources and their use; techniques of integrated natural resource management, ecological principles, current policies, social trends, and forest and wildlife resource use. Day-long field trips may be required.

300 Current Issues in Renewable Natural Resources (3) Environmental, economic, and social perspectives and attitudes concerning natural resources and their use; techniques of integrated natural resource management, ecological principles, current policies, social trends, and forest and wildlife resource use. May be repeated. Maximum 3 hours. Satisfactory/No credit only. F

311 Dendrology/Ecology/Silvics (4) Principles of plant identification; ecological principles; characteristics of forests and associated ecosystems. Prereq: 1 year of Biology. 2 hours and 1 lab. F

312 Silviculture (2) Principles for treating forest stands to achieve selected objectives. Prereq: 311. Coreq: 313, 315. 1 hour and 1 lab. F

313 Measurements and Sampling (2) Measurement techniques and sampling methods for vegetation; estimation of animal populations; map and aerial photo use. Prereq: Statistics 201. Coreq: 312, 315. 1 hour and 1 lab. F

315 Forest Soils and Watershed Management (3) Soil information, properties, water relations and the landscape; principles of soil management. Nutrient cycling; Classification and management of forest soils. Hydrology and management of water in the forest ecosystem. Coreq: 312, 313. 2 hours and 1 lab. F

316 Managing Natural Resource Organizations (3) Evolution of natural resource professions and organizations. Literature and role of the major professional groups within each discipline. Prereq: 211. 2 hours and 1 lab. F

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

FRENCH (405) 
111-112 Elementary French (3,3) Introduction to French. May not be repeated for credit by students with two years of high school or one year college French. Must be taken in sequence. Language Laboratory required.

199 The French Language and World Business (1) 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 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 whose placement test results indicate that they are not prepared for the 211-212 sequence. Special emphasis will be placed on developing proficiency in the French language. 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 prepare students for upper level instruction in the French language. Must be taken in sequence. Language Laboratory required.

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 of study covering speaking ability and reading, including literary selections. Students with a grade of A in 211 may enter 218 with permission of instructor. Creation of this course has resulted in students receiving a grade of A or B in the course.

291-292 French Literature in English Translation (3,3) 291-From the origins through the Age of Voltaire. Song of Roland, Rabelais, Montaigne, the Classical period, and Voltaire. 292-Diderot, 19th and 20th centuries; Flaubert, Rimbaud, Sartre, Camus. May not be counted toward the major or minor. Writing emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

300 French Transition (2) Development of linguistic skills necessary for satisfactory work in courses above 300. Recommended for incoming 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 preparing for language examinations, and upper division students desiring reading knowledge of the language. Undergraduate credit only. Not for credit for those who have taken 212. Prereq: 212, 218 or equivalent.

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. F

313 Aspects of French Literature (3) Study of masterpieces from the great literary movements and counter-movements. Prereq: 212 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). May be counted toward the major or minor. (Same as Women's Studies 324.)

341-342 Intermediate Conversation and Composition (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 341 or 342 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 communicating in business letters; oral and written communication and elements of French culture related to good business practices. Either 342 or 345, 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) 400-Consecutive Translation to and from English. Introduction to simultaneous translation to and from English. Training of students with good knowledge of French for consecutive and simultaneous translation from French into English, and vice versa, on a variety of subjects such as business, politics, science. Prereq: 342, 345 or equivalent. Preferably taken in sequence.

410 Medieval French Literature (3) Major representational works of Medieval French Literature. Texts in modern French. Prereq: 212, 216 or equivalent. (Same as Medieval Studies 410.)

411 French Literature of the 16th Century (3) Highlights of 16th century French literature. Excerpts from Rabelais and Montaigne; readings of poems from the writers that have influenced the French nobility for the period, and Voltaire. Prereq: 212, 216 or equivalent.


413 French Literature of the 18th Century (3) Major works of the Enlightenment. Prereq: 212, 216 or equivalent.


416 Survey of Francophone Literature (3) Introduction to writing in French outside of France. Prereq: 212, 216 or equivalent.

419 Readings in French Literature (3)

420 French Cinema (3) The French cinema from its earliest days through the New Wave directors. Prereq: 212, 216 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. Laboratory training highly recommended. Recommended for students preparing to take this course for graduate credit. Graduate credit is not offered to students majoring in the Department of Romance Languages. Prereq: 212, 216 or equivalent.

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

423-424 Advanced Conversation (1,1) Informal conversation with native speaker on contemporary topics. Stress in class contact rather than outside preparation. Meets two hours a week for one semester credit. Prereq: 342 or 345.

425 Introduction to Descriptive Linguistics (3) Phonetics and phonemics, morphology and syntax. Types of languages, linguistic groups, dialects, and dialect geography. Application of descriptive linguistics—field linguistics, dialect study, its practical use in learning languages and teaching. Introduction to transformational grammar. Prereq: six hours of upper division English or six hours of upper division courses in a modern or ancient language (exclusive of German and French 301-302, courses in literature in translation, and general courses in Latin and Greek requiring no knowledge of these languages), or consent of department.

426 Advanced Descriptive Linguistics (3) Modern and historical linguistics. Theories of language and linguistic universals. Historical linguistics, comparative methods, historical principles, historical diachronic analysis. Prereq: 425 or consent of instructor.
361 Regional Geography of the United States and Canada (3) Physical, economic, and social distributions as they interrelate to give distinctive character to regions of the United States and Canada. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

363 Geography of the American South (3) Geographical concepts and theories focusing on cultural landscape, cultural traits of the area. Writing-emphasis course: at least one in-class essay examination 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 southern Appalachia. Appalachia in perspective in the current American society. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

366 Geography of the Soviet Union (3) Geographical concepts and theories focusing on cultural landscape, especially trends over the past 40 years. Emphasis on changing population patterns, development of agriculture, and patterns of urban-industrial development. Prereq: 101-102 or 310 or consent of instructor.

372 Geography of the American South (3) Physical, cultural, and economic characteristics of the southeastern United States and Canada. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

373 Geography of South America (3) Physical, cultural, and economic characteristics of the earth’s surface and human activities. Emphasis on Latin America. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

375 Geography of the Soviet Union (3) Geographical concepts and theories focusing on cultural landscape, especially trends over the past 40 years. Emphasis on changing population patterns, development of agriculture, and patterns of urban-industrial development. Prereq: 101-102 or 310 or consent of instructor.

400 Capstone Experience in French (3) Synthesizing senior colloquium and tutorial in which students reflect on their experiences in French and their multi-dimensional point of view. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

419 Practicum in Cartography/Remote Sensing (2-6) Designed to assist students interested in the use of cartographic technology and remote sensing to synthesize computational, graphic, and statistical techniques. 2 hours lecture and 2 hours lab per week. Prereq: 310 or consent of instructor.

425 Historical Geography of the United States (3) Study of the changing human landscape of the United States during four centuries of settlement and development. Emphasis on changing population patterns, development of agriculture, 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 surface form, water, vegetation, and surface materials, and their regional interrelationships. People as evaluators of changes. Prereq: 131-132 or consent of instructor.

434 Climatology (3) General circulation system leading to world pattern of climates. Climatic change and modifications, and interrelationships of climate and human activity. Prereq: 131-132 or 334 or consent of instructor.

435 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 are emphasized. Prereq: 131-132 or 330 or consent of instructor.

436 Water Resources (3) Global water resources and hydrologic processes, including water availability, flooding, and water quality issues examined from physical and economic geographic perspectives. 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. (Same as Urban Studies 441.)

443 Rural Geography (3) Geographical appraisal of rural areas of the United States, including small towns and large fringes. Prerequisite: 131-132 or 330 or consent of instructor.

445 Geography of Resources (3) Factors related to various types of 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 use, location problems, 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.

492 Off-Campus Study (1-15) Prereq: Written consent of department required prior to registration.

493 Independent Study (1-15) Prereq: Written consent of department required prior to registration.

499 Proseminar in Geography (3) Major themes in geography, especially trends over the past 40 years. Required for majors. Not 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.

GEOLOGY (424)

100 The World's Oceans (3) Geophysical, biological, and biogeochemical processes affecting the marine environment. 3 lecture hours per week.

101-102 General Geology, I and II (4,4) 101-Physical processes occurring on and beneath the earth's surface and their geological consequences. 102-Modern physical processes and their interaction with natural and human systems. This course is offered once a year. 5 lecture hours per week.

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102 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 to Geography major.
203 Geology of National Parks (3) Geologically spec-
tacular landscapes and geologic history of national parks of the world. Human attempts to preserve the Earth's surface structure have increased, 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 rocks and minerals. Prereq: College of Engineering students only. 2 lecture hours and one 2-hour lab or field period. 210 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: 101, Chemistry 120-130 or equivalent. 3 hours lecture and 1 lab. 320 Paleobiology (3) Fossils and their uses in func-
tional morphology, paleobiogeography, biogeographic his-
tratigraphy, and evolution. Prereq: 102 or consent of instructor. 2 lecture hours and one 2-hour lab or field period. 325 Geological History of Land Organisms (3) Origin and development of terrestrial organisms in space and time with emphasis on the fossil record and present day 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) Classi-
cification and properties of igneous and metamorphic rocks, the processes that produce them, and the tec-
tonic environments in which they form. Prereq: 310, 2 lecture hours and one 2-hour lab. 340 Stratigraphy and Sedimentation (3) Stratigraphic principles and practices, physical and geometrical pro-
cesses and interpretation of depositional environments. Prereqs. 101, 102 and 310. 2 lecture hours and one 2-
hour lab or field work. 450 Geology of East Tennessee (1) Geology of the Southern Appalachian region. Prereqs. Completion of major core courses or consent of instructor. 1 hour lecture plus field trips. 460 Introduction to Oceanography (4) Physical, chemi-
cal, biological, and geological processes of the oceans, including tides, wave, ocean circulation, ocean basin processes, marine sedimentation, biogeochecmical cycles, and food webs. Prereq. Chemistry 120-130; recommended: 101-102, 2 lecture hours and one 2-hour lab. (Same as Botany 346.) 370 Structural Geology (4) Common geologic structures (folts, faults, cleavage) and their genesis. Labour-
tory includes map interpretation, cross-sections, projec-
tions, stornestems. Prereq: 101-102, Mathematics 141-
142, and one 3-hour lab or field period. 380 Environmental Crises - 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 pol-
cies. Emphasis on appraisal of conventional and alter-
native energy resources. 3 lecture hours. 410 Advanced Mineralogy (3) Crystal chemistry of the rock forming minerals. Interactions 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 diffractometer methods of mineralogy. Prereqs: 310. 2 lecture hours, one 2-hour lab. 420 Paleocology (4) Principles of ecological analysis as applied to fossils and fossil assemblages with em-
phasis on data collection and interpretation. Laboratory is designed around preparation of scientific reports based on field and laboratory analysis. Writing-empha-
sis course. 3 lecture hours and one 2-hour lab. 421 Invertebrate Paleontology I (3) Preservational processes and geologically important representatives of Protoista, Porifera, Cnidaria, Bryozoa, and Brachiopoda. Emphasis is on taxonomy, skeletal structures, ecology, and stratigraphic distribution. Prereq: 320 or consent of instructor. 2 lecture hours and one 2-hour lab. 422 Invertebrate Paleontology II (3) "Higher inverte-
brates": Annelida and other worms, Mullusca, Arthro-
poda, Echinodermata, Graptzacea, Conodonta, Chor-
data. 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 ex-
tinctions, macroevolution, and evolutionary rates. Prereq: 320 or equivalent. 426 Paleobotany and Palynology (3) Evolutionary his-
tory of terrestrial plant life through examination of the fossil record of macrobotanical remains, spores, and pollen. Emphasis is on the history of Gondwanaland and Angiosperms; changes in floristic provinces through geologic time. Prereq: 102; Botany 310-320 or consent of instructor. 3 lecture hours and one 2-hour lab. (Same as Botany 426.)
401 Greek Poetry (3) Major periods in the development of Greek literature since 1750, 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. Phonological and historical change, language families, Proto-Indo-European and other proto languages. Prereq: 6 hours of upper-division foreign language 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) Contrasting English-German segmental and suprasegmental phonemes, contrasting 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, Early New High German, and Modern German. Emphasis on phonological and external linguistic history of German speech. Prereq: 6 hours of upper-division German language courses excluding courses in translation or graduate reading courses. (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 graduate courses.

491 Foreign Study (1-15)

492 Off-Campus Study (1-15)

493 Independent Study (1-15)

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

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.


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

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

405-406 Selected Readings from Greek Literature (3,3) For advanced students in Greek, the study of plays, the historical writings, the poetry of ancient Greece in the original Greek. May be repeated for credit. Maximum 9 hours. Prereq: 401-402 or consent of instructor.

HEALTH (449)

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

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, suffocation, poisoning, drug intoxication, and vehicular and other accidents. Educational and preventive aspects of controlling cardiovascular disease. Leads to basic life support certification. F, Sp

300 Health Education, Promotion, and Behavior (3) Health-related goals, roles, target populations in school, community and health care settings; health careers and opportunities; health behavior and intervention techniques; health promotion strategies. F, Sp

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, recognition and methods for handling them; healthful school environment; school health services; and community resources, health personnel, voluntary and official health agencies. May not be taken for credit by health majors. F, Sp

306 Instruction in Elementary Grades (2) Topics appropriate for school-aged children in elementary grades. Organization and presentation of health content emphasized. Teachers become familiar with health materials, curricula, literature, community resources and planned programs for teaching health. Prereq: 305 and admission to Teacher Education Program. F, Sp

310 Advanced First Aid and Emergency Care (3) Theory and practice of first aid and emergency care. Program covers self-help and first aid capabilities of lay persons. Course leads to Advanced First Aid and Emergency Care certification. Applicant must be at least 15 years old for certification. E

325 Planning, Evaluation and Administration of Health Programs (3) Organization of health programs in school, community and health care settings at public and private levels. Plan and assess various health education and health promotion efforts. F

330 Wellness Through Health, Leisure and Physical Activity (3) Emphasis on taking personal responsibility for one's health. Includes topics related to the healthy lifestyle, and provides specific guidelines of how to change inappropriate behaviors. (Same as Physical Education 530.)

375 Health Education: Curriculum, Methodology, Communications (3) Principles of health education curriculum construction, methodology and communication strategies for teaching/transmitting health education information. Sp

380 Research and Grant Writing (2) Study and application of research methods and grant writing techniques for health education programs. Skills for reading and interpreting journal and research articles. Exercises and student projects to develop a research or grant proposal. Emphasis on development and review processes. Sp

400 Consumer Health (3) Major consumer health care providers and procedures for health education, purchasing, evaluating and financing medical and health care services/products. (Same as Public Health 400.) E

405 Alcoholism and Alcohol Education (3) Factors which make alcoholism a serious health and safety 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 loss. 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 Physical Activity and Fitness (2) (Same as Physical Education 414)

415 Field Evaluation of Physical Fitness (1) (Same as Physical Education 415.)

420 Sex Education As It Relates to Human Sexuality (3) Science of human sexuality. Emphasis on the trends, issues, controversy and ethics. F

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, management 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

465 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. E

475 Directed Independent Studies (1-3) Individual identification and study of a health/wellness or health promotion problem or issue. Prereq: Consent of instructor. May be repeated. Maximum 12 hours. E

491 Internship I: Grades 7-12 (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.

492 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

493 Field Practice (10) Off-campus health internship or field practice in an educational or other agency with qualified professional. Prereq: 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-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. Prereq: 151-F; 152-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 to 1500. 162-1500 to present. 161-F; 162-Sp Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

195-196 Afro-American History: An Introduction (3,3) 195 Afro-American experience to 1890. 196 Afro-American experience from 1890. The Afro-American struggle for political, civil, and social equality; leaders of the struggle, their philosophies and programs; responses of Black community institutions to the challenges of the 20th century; the rise of the urban ghetto; the Civil Rights and Black Power movements.

202 The City in Europe, 1000-1900 (3) Urban growth, emphasizing the role of external factors and social foundation of the cities, their political and cultural development and their physical structure.

251-252 History of the United States (3,3) 251-Settlement to 1877. 252-1877 to present. E

253-254 United States History for International Students (3,3) 253-Settlement to 1865. 254-1865 to present. 253-F; 254-Sp Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

257-258 Honors: History of the United States (3,3) Prereq: Consent of department. 257-F; 258-Sp Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

307 Honors: Introduction (3) Historical analysis and interpretation, philosophical and technical norms of research. Required of students working for honors in history. Prereq: Consent of department.
308 Honors: Historical Problems (3) Application of techniques and insights from 307 to selected historical issues to emphasize problems of evidence, interpreta-
tion, and the uncovering of patterns and processes of culture and change. Honors for honors in history. Prereq: Consent of department.
310-311 The Ancient World (3,3) 310-Development of Athenian democracy: its successes and failures; political crisis of the fourth century B.C.; emergence of Hellenistic civilization, the Roman Empire; and its consequences: militarism, empire, socioeconomic changes, constitutional crises, emergence of military and social elites; 311-Development of the Roman Empire and its civilization, and the use of Roman imperialism and its consequences: militarism, empire, socioeconomic changes, constitutional crises, emergence of military and social elites; 312-313 Medieval History (3,3) 312-Early Middle Ages: 300-1100. Formation of medieval society and institu-
tions. 313-Later Middle Ages 1100-1600. Height of medieval civilization, and its waning in the fourteenth century. (Same as Medieval Studies 312-313.)
314 Renaissance Europe (3) The period traditionally seen as a transition from the Middle Ages to the modern world. Interrelationship of cultural, social, eco-
nomic, political and intellectual developments, with an emphasis upon historical interpretation.
315 Reformation Europe, 1500-1650 (3) The period during which Europe witnessed religious diversity, eco-
nomic dislocation and insecurity, political centralization, intellectual skepticism, the origins of modern science, war and the witch craze. (Same as Religious Studies 315.)
316 Early Modern Europe, 1650-1800 (3) Dynamic conflict of a search for order in an age of revolutions, seen in the continued push for political centralization, the decline of the nobility, the flowering of the Enlightenment, known as the "Enlightenment," and the Eng-
lish and French revolutions.
319 Modern Europe, 1750-1914 (3) Political, social, and intellectual developments against traditions. Topics such as the modern population explosion, urbanization, the political emergence of the middle class and the modern state, nationalism, liberalism, and Romanticism in social thought and politics. Writing-emphasis course: at least one in-class essay examina-
tion and 3000 words of writing outside the classroom.
320 Contemporary Europe, 1900-Present (3) The transformation from industrial to post-industrial society and the transformation of the European nation-state. Topics such as war and depression and the consequent post-war politics and social instability, totalitarianism, control, modernization; the impact of Freud, Einstein and existen-
tialism; welfare states; and the problems of European unification. Writing-emphasis course: at least one in-class essay examina-
tion 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) 330-331-1668. 331-1689 to the present. Medieval state, church, and society; origins of Anglo-American law; the monarchy and parlia-
mentary government, the Reforma
tion, 17th Century revolts, commercial and agricultural industrial revolu-
tions, class conflict, empire, the welfare state, world wars, economic crisis.
332-333 History of France (3,3) 332-333-The emergence of modern France from the Renaissance to 1789. 333-
France since the Revolution, 1789 to present.
334-335 History of Germany (3,3) 334-Germany I, to 1871. 335-Germany II, to 1945. The develop-
ment of the German lands, from the medieval empire to its disintegration, through dynamic and religious resis-
tances, to the Austrian-Prussian dualism in the time of Frederick the Great and Maria Theresa, culminating with the end of the older order in the Age of Napoleon. 335-Germany II. Since 1860. The Quest for Nationality. The evolution of modern Germany through revolution, industrialization and wars, from Metternich's Confederation of the Rhine to the rise of the Nazi party. From a republic to Hitler's Third Reich, to Adenauer's Federal Republic and the present nation of two states.
336 A History of Austria and Central Europe: Fron-
tier and Civilization Center (3) Austria's development, as part of the Hapsburg collection of states, and its search for identity as it underwent drastic changes, from a multi-tribal empire to a state with a status to an
481 Studies in History (3) Variable content. Subject matter not covered in other courses. May be repeated. Maximum 9 hours.

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

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. Sp

320 Strategies of Teaching Home Economics (3) Teaching methods, techniques, use of media. Field experience included. F, Sp

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.reed: laboratory. 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

440 Teaching in Community-Based Programs (3) Planning and implementing non-formal instructional programs; methods, curriculum, delivery systems, evaluation. Includes field experience. Prereq: Senior standing. (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. Prereq: Consent of instructor. Satisfactory/No Credit only. F, Sp

497 Honors: Home Economics Education (3-6) Issues or topics affecting home economics education, designed to meet particular interests of the student. Prereq: Junior or Senior standing and consent of 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 hospitality complex. F

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 and procedures, resources in foodservice systems; decision-making and problem solving principles. F, Sp

320 Quantity Food Procurement, Production and Service (3) Plans and organizes quantity food procurement, storage, producing and serving foods in volume. Prereq: 220; NFS 100 or 107, 101 or 311. Micro 210 or PH 310; progressions into HRA program or consent of the instructor. Coreq: 321 or 322. F, Sp

321 Quantity Food Procurement, Production and Service Laboratory (1) Application of principles in determining needs, procuring, storing, producing and serving foods in volume. Prereq: 220; NFS 100 or 107, 101 or 311. Micro 210 or PH 310; progression into HRA program or consent of the instructor. Coreq: 320 or 322. F, Sp

332 Quantity Food Procurement, Production and Service Observation (1) Laboratory work with seniors. Satisfactory/No Credit only. F, Sp

420 Field Experience in Hotel and Restaurant Administration (3) Supervised educational experiences in selected tourism, food and lodging operations followed by a two-day seminar. Offered only in summer semester. Students enrolled in this course may not be enrolled in any other courses. Prereq: 320 or 321 or 322; Accounting 202; Economics 201; Marketing 301; Business Law 301; 100 hours of verifiable work experience. Satisfactory/No Credit only. Su

422 Food and Lodging Personnel Development (3) Training programs; personnel management procedures and processes involving human resources of lodging and foodservice systems. Prereq: 320, 321 or 322; Accounting 202; Economics 201; Marketing 301; Business Law 301; 100 hours of verifiable work experience. Satisfactory/No Credit only. Su

423 Hospitality Sales and Marketing (3) Strategic marketing concepts and techniques involved in the management of hospitality operations; includes property/product, market, and competition analyses; 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 the staff, management, and guests of lodging and foodservice operations. Includes seminar. May be repeated. Maximum 3 credits. Prereq: Senior standing or 322; Accounting 202; Economics 201; Marketing 301; Business Law 301; 100 hours of verifiable work experience. F, Sp

426 Convention Management (3) Scope and segments of convention management including aspects of management involving human resources; meeting individual needs; methods and techniques for outstanding service. Prereq: 423, Marketing 301; 100 hours of verifiable work experience. F, Sp

440 Special Topics: Hotel and Restaurant Administration (1-3) Developments, issues and problems in Hotel and Restaurant Administration; topics variable. Prereq: Junior or Senior standing. May be repeated. Maximum 3 credits. E

494 Directed Study: Hotel and Restaurant Administration (1-3) Individual student: faculty experience. Prereq: Junior and Senior Standing, consent of the instructor. Satisfactory/No Credit only. E

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

200 Professional Orientation (3) Presentation of ecosystem model and its application to the enhancement of human physiological and social systems; relationship between people and their environments. F, Sp
HUMAN SERVICES (532)

220 Introduction to Human Services (3) Focus on related social values and contemporary issues in human services. Emphasis on the various professions, settings, and roles as students examine the complexities of human needs and social problems.

320 Peoples and Problems of Appalachia (3) Explores the status and contributions from contemporary human services' point of view. Special emphasis placed on political and economic structures of region.

330 Thinking About People (3) Development of thought-processes, relationship to political and economic structures of region. Emphasis on the various professions, setting, and societal values and contemporary issues in human services. Point of view. Special emphasis placed on the evolution of social policy. Prereq: 200 and 3 credit hours each in CFS, NFS, ID or TA exclusive of HE 210. F, Sp.

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

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 (3) Classification and properties of two and three-dimensional forms; the use of color and space; principles; visual and spatial elements within simple and complex visual systems; role of movement in experiencing scale and volumetric space. Open only to majors in interior design and architecture. F

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

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; spread-sheets, word processing, and database. Prereq: Declared major in College of Human Ecology. F, Sp.

220 Introduction to Human Services (3) Focus on related social values and contemporary issues in human services. Emphasis on the various professions, settings, and roles as students examine the complexities of human needs and social problems.

240 Fundamentals of Interior Design I (4) Principles of spatial organization and display; creative problem-solving and communication techniques for micro-interior environments; perspective drawing, model building, experimentation with various media. Prereq: 140, Arch 172. F

250 Fundamentals of Interior Design II (4) Problem solving, spatial organization of micro environments, increasingly larger scale; communication of total design solution, group, audio and photographic techniques. Prereq: 240. Sp.

270 History of Interior Architecture I (3) Interior architecture, decoration and decorative arts within cultural context; extension of history of art. Emphasis on Italy, France and England. Prereq: one semester Art History.

280 Micro-Computers for Interior Design (3) Electronic spreadsheet, word processing, microcomputer use in client and manager; data-base information to relate anthropometric to furniture dimensioning and specifications for maximum work efficiency and product trade-offs in meeting budget constraints. Prereq. or Coreq: 240. Interior Design students only. F


315 Survey of Contract Interiors (3) Planning and organizational interior spaces for restaurants and lodging facilities; relation of furnishings to architectural space. Open only to Hotel Restaurant Administration majors. (Offered Fall and Spring in even years; A, F, Sp.)

340-350 Intermediate Interior Design I, II (4,4) Studio problems in interior design. Integrates the course with additional emphasis on professional practice; considers clients; design methods, design as influenced by cultural context, colonial era through twentieth century. Prereq: 370 or consent of instructor. F

360 Survey of Interior Design (3) Planning and organizational interior spaces for restaurants and lodging facilities; relation of furnishings to architectural space. Open only to Hotel Restaurant Administration majors. (Offered Fall and Spring in even years; A, F, Sp.)

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

390 Visual Studies (3) Classification and properties of two and three-dimensional forms; the use of color and space; principles; visual and spatial elements within simple and complex visual systems; role of movement in experiencing scale and volumetric space. Open only to majors in interior design and architecture. F

400 Introduction to Interior Design (2) Focus on related social values and contemporary issues in human services. Emphasis on the various professions, settings, and roles as students examine the complexities of human needs and social problems.

450 Directed Study: Human Ecology (1-3) Topic arranged by individual student under supervision of faculty. May be repeated with different topic. Maximum 6 hours. Prereq: Progression to the major. F

460 Directed Study: Human Ecology (1-3) Topic arranged by individual student under supervision of faculty. May be repeated with different topic. Maximum 6 hours. Prereq: Progression to the major. F

470 History of Contemporary Interior Architecture (3) Interior architecture, furniture, design philosophies, nineteenth century roots of twentieth century developments, Europe and America; design as influenced by movements in fine arts, technological advances, cultural context. Prereq: 370 or consent of instructor. F

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

492 Off-Campus Study (1-15) Prereq: PRF or consent of instructor. May be substituted for 420 in student's professional curriculum. Determination of credit based on particular international experience. Prereq: Consent of department head. Su.

ITALIAN (584)

111-112 Elementary Italian (3,3) Introduction to Italian. May not be taken for credit by students with two years of high school or one college 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 in relation to 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 Petrarch and Boccaccio (3) Prereq: 212 or consent of instructor. (Same as Medieval Studies 402.)

403-404 Literature of the Rinascimento (3,3) From Puccio 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)
491 Foreign Study (1-15)

JOURNALISM (594)
201 Publicity and Public Relations (3) Principles and practice of writing for mass media. Public information campaigns for organizations and institutions. Not available for majors in the College of Communications. Prereq: English 102, F, Sp.
203 Editing (3) Methods and practice in judging news, editing copy, writing headlines and designing newspapers and magazines. Emphasis on precise word use and news display. Prereq: Communications 200, F, Sp.
290 Photojournalism (3) Principles and practice of photography as a creative tool of communication. Basic camera technique, darkroom work, historical and contemporary photojournalism. Lecture and laboratory. E.
310 Feature Writing (3) Skills of journalism for writing feature articles for newspapers, magazines and company publications. Critiquing of students' work in writing workshop, and analysis in class. Prereq: English 270. F, Sp.
420 Print Media Management (3) Current business practices with emphasis upon study and use of rhetorical devices in rhetoric, persuasion, and content of publications. Staff selection, content of publications, copy, layout, photography, printing, advertising and business. Planning course outlines and curricula for journalism/media mass studies.
492 Field Experience (1-2) Approved internships and other supervised practice in journalism and public relations. May be repeated for a maximum of 4 credit hours. Prereq: Senior standing and consent of instructor. E.
493 Independent Study (3) May be repeated for maximum of 6 hours. Prereq: Consent of instructor.

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: Vergil's Aeneid (3) Prereq: 251 or equivalent.
351 Cicero and Sallust (3) Prereq: 252 or equivalent.
352 Roman Lyric Poetry (3) Poetry of Catullus, Horace, and the elegists. Prereq: 252 or equivalent.
414 Cicero and Techniques of Latin Prose Composition (3) For advanced students in Latin. Practice in prose composition. The writings of Cicero. The model. Prereq: 351-352 or consent of instructor.
431-432 Selected Readings from Latin Literature (3,3) For advanced students in Latin. Oratory, historical writings and poetry of ancient Rome, in the original Latin. May be repeated for credit. Maximum 9 hours. Prereq: 351-352 or consent of instructor.
435 Medieval Latin (3) Selected readings from the Latin prose and poetry of medieval Europe. Prereq: Consent of instructor.

LATIN-AMERICAN STUDIES (600)
251-252 Introduction to Latin American Studies (3,3) Societies of Latin America with special emphasis on dominant culture patterns, social changes, and impact of nationalism. 19th-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.
311 Aspects of Lusco 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.)
355 Latin American Government and Politics I (3) (Same as Political Science 355.)
360 History of Latin America (3) (Same as History 360.)
361 History of Latin America (3) (Same as History 361.)
372 Geography of Middle America (3) (Same as Geography 372.)
373 Geography of South America (3) (Same as Geography 373.)
401 Cultural Pluralism 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.

402 Latin American Studies Seminar (3) Selected topics in Latin American studies. May be repeated. Maximum 6 hours.
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 an information search 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, recordings, films and related materials; book talks and other devices for encouraging reading. Undergraduate credit only. Sp.
430 History of the Book (3) History of writing and various methods of bookmaking 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) Introduction to linguistics with focus on language development and use of language by individuals and groups. Prereq: Completion of Freshman English or equivalent.
371 Foundations of the English Language (3) (Same as English 371.)
372 The Structure of Modern English (3) (Same as English 372.)
400 Topics in Linguistics (3) Content varies. May be repeated. Maximum 6 hours.
411 Linguistic Anthropology (3) (Same as Anthropology 411.)
420 The Development of Historical Linguistics as a Science (3) Development of the scientific understanding of language change. Emergence of the Neogrammarians paradigm from 19th century intellectual trends. Impact of synchronic, descriptive, structural and transformational-generative linguistics. Undergraduate Credit only. E.
425 Introduction to Descriptive Linguistics (3) (Same as French 425, German 425, Russian 425, and Spanish 425.)
426 Methods of Historical Linguistics (3) (Same as French 426, German 426, Russian 426, and Spanish 426.)
429 Romance Linguistics (3) (Same as French 429 and Spanish 429.)
The Development of Synchronic Linguistics as a Subdiscipline of Linguistics (3) A study of the development of synchronic linguistics and its impact on the field of linguistics. Prerequisites: Consent of instructor.

434 Structure of the German Language (3) (Same as German 435.)

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.)

473 Teaching English as a Second or Foreign Language I (3) (Same as English 473.)

475 Teaching English as a Second or Foreign Language II (3) (Same as English 475.)

485 Special Topics in Language (3) (Same as English 485.)

LOGISTICS AND TRANSPORTATION (624)

301 Introduction to Logistics (3) Business logistics as a function of the marketing mix and as a strategic element of the marketing mix. Role of materials management and physical distribution, and activities such as customer service, order processing and information flow, transportation, warehousing, purchasing, inventory, and system design and organization.

302 Introduction to Transportation (3) Transportation and logistics as a part of the nation's economic and social structure. U.S. transportation system; society's demands for mobility and policies of public and private sectors to meet those demands. Prerequisites: Economics 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 once for additional credit provided topic is different. Maximum 6 hours. Consent of Instructor.

401 Materials and Traffic Management (3) Planning and management of logistics activities including purchasing, transportation, storage and control, and supply strategies. Materials management tools and organizational structures for various industries. Prerequisites: 301-302.

402 Transportation Operations and Cost Management (3) Freight carrier operations with the development of carrier costs and their control considered by each mode individually and in coordination with each other. Prerequisites: 301-302.

441 Global Logistics and Transportation (3) Multinational logistics strategy, import-export process, global laws, tariffs, and air and ocean transportation systems analysis. Prerequisites: 301-302.

450 Computer Information Systems Analysis and Design (3) Design of operational/logistical systems for organizations based on evolving microcomputer hardware networks, data base design theory, procedural and standard query language software. Analysis and operational decision support requirements. Prerequisites: Management 303.

461 Seminar in Logistics Strategy (3) Senior seminar in development of strategy in logistics management. Major writing requirement. Prerequisites: 301, 302 and senior standing.

462 Seminar in Transportation Strategy (3) Senior seminar in development of strategy in transportation management. Major writing requirement. Prerequisite: 6 hours of coursework required for Logistics concentration or consent of instructor.

493 Independent Study (1-6) Directed research on subjects of mutual interest to student and faculty member. May be repeated. Maximum 6 hours credit. Consent of Instructor.

497-498 Honors I & II (3,3) Topics may include non-business marketing applications, macroenvironmental marketing, marketing research techniques, services marketing, marketing channels and related issues. Consent of Instructor.

MATHMATICS (641)

110 Algebraic Reasoning (3) A course in the applica- tion of elementary mathematics to life in the modern world. Includes applications in financial mathematics, consumer mathematics, and other areas. Students preparing to take 121 should take 110 instead of 110. Two years of algebra and one year of geometry of high school, plus satisfactory placement test scores, or 110, or 119, or 130.

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 indicated additional preparation is necessary. Students who receive a grade of C or better in any course numbered 121 or higher may subsequently receive credit for 119. Two years of algebra and one year of geometry of high school, plus satisfactory placement test scores, or 110, or 130.

121 Calculus A (3) For students not planning to major in the physical sciences, engineering, mathematics, or computer science. Calculus of algebraic, exponential, and logarithmic functions, with applications. No student who has received credit for Math 141 or 151 with a grade of C or better may subsequently receive credit for 121. Two years of algebra and one year of geometry of high school, plus satisfactory placement test scores, or 110, or 130.

122 Calculus B (3) Sequel to 121, including elementary matrix algebra, multiple variable calculus, and optimization. No student who has received credit for 241 or 251 may subsequently receive credit for 122. Prerequisites: 121 or 141, or 142.

130 Precalculus I (4) Review of algebraic, logarithmic, exponential, and trigonometric functions for students who satisfy the course prerequisites for 141 or 151, but whose placement test scores indicate additional prepa- ration is necessary. Students who have earned a grade of C or better in 141 or 151 may not subsequently receive credit for 130. Two years of algebra, a year of geometry, and half a year of trigonometry in high school. Students who did not study trigonometry in high school may take the noncredit course in trigonometry simultaneously with 130.
141-142 Calculus I, II (4,4) Standard first-year course in single variable calculus, especially for students of science, engineering, mathematics, and computer science. Differential and integral calculus with applications. Credit will not be given for both 141 and 151. Prereq: Two years of algebra, a year of geometry, and half a year of trigonometry in high school, plus satisfactory placement test scores, or 130.

143-144 Microcomputer Laboratory (1,1) Optional supplement to the calculus courses, featuring computer demonstrations and projects. Students registering for one of these lab courses must also be registered for the corresponding calculus course.

147-148 Honors: Calculus I, II (4,4) Honors version of 141-142 for well-prepared students. Qualified students are usually invited to enroll, but inquiries from other students having excellent high school mathematics backgrounds are welcome.

151-152 Biocalculus I, II (3,3) For students majoring in the life sciences. Topics from calculus of algebraic, logarithmic, and exponential functions, probability and statistics, with emphasis on applications to the life sciences. Credit will not be given for both 141 and 151. Prereq: Two years of algebra, a year of geometry, and half a year of trigonometry in high school, plus satisfactory placement test scores, or 130.

200 Matrix Computations (1) Introduction to matrix calculations, including determinants, eigenvalues and eigenvectors. For students in the College of Engineering and Computer Science only. Students who have received a grade of C or better in 251 may not subsequently receive credit for 200. Prereq: 141-142.

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

221-222 Discrete Mathematics I, II (3,3) Logic, sets, combinatorics and probability, functions and relations, induction and recursion, elementary number theory. Prereq: 141 or 151.

231 Differential Equations I (3) First course, emphasis on solution techniques. Includes first-order equations and applications, theory of linear equations, equa- tions of higher order with constant coefficients, Laplace transforms, and series solutions. Prereq: 141-142.

241 Calculus III (4) Calculus of functions in two or more dimensions. Includes solid analytic geometry, congruence and similarity, constructions with compass and straightedge, transformations, area and volume, integral approximation. Prereq: 221.

243 Microcomputer Laboratory (1) Optional supplement to 241, featuring computer demonstrations and projects. Coreq: Students registering for 243 must also be registered for 241.

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

251 Matrix Algebra I (3) First course in the algebra of matrices. Includes Gaussian elimination, linear equations and inequalities, linear dependence, eigenvalues and eigenvectors, vector spaces, linear transformations, eigenvalues, and eigenvectors. Prereq: 141-142.

253 Microcomputer Laboratory (1) Optional supplement to 251, featuring computer demonstrations and projects. Coreq: Students registering for 253 must also be registered for 251.

257 Honors: Matrix Algebra I (3) Prereq: 147-148 or invitation of the department.

323 Probability I (3) Elementary combinatorics; discrete probability, conditional probability and stochastic independence; discrete and continuous random variables (including binomial, Poisson, uniform and normal); joint distributions, expectations and characteristic functions; elementary treatment of laws of large numbers and the central limit problem. Prereq: 241.

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

351 Algebra I (3) Introduction to abstract algebra, emphasizing integers and polynomial rings. Prereq: 221 and 251.

371 Numerical Algorithms I (3) Selection of algorithms and associated library software for problems selected from roots of polynomials, linear equations, least squares data fitting, interpolation, numerical integration, numerical methods for ordinary differential equations. Prereq: 241, 251, and a background of high level programming language, such as FORTRAN. (Same as Computer Science 371)

399 Studies in Mathematics (3) May be repeated. Maximum 9 hours. Prereq: Consent of instructor.

400 History of Mathematics (3) Development of major ideas in mathematics from ancient to modern times and the influence of these ideas in science, technology, philosophy, art, and other areas. Prereq: 141-142 or equivalent. Writing emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

401 Mathematics and Microcomputers (3) Primarily for students seeking certification as mathematics teachers at the secondary level. The use of microcomputers to study concepts and problems in mathematics. Does not satisfy major requirements for a B.S. or M.S. in mathematics. Prereq: 141; 221 or 504.

404 Applied Vector Calculus (3) Topics from multivariable vector calculus including line and surface integrals, the divergence of a vector field, and the theorems of Gauss and Stokes. Prereq: 241.

405 Models in Biology (3) Difference and differential equation models of biological systems. Prereq: 141-142 or 151-152.

411 Mathematical Modelling (3) Construction and analysis of mathematical models used in science and industry. Projects emphasized. Prereq: 231, 241, and 251. Writing emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

421 Combinatorics I (3) Introduction to problems of construction and enumeration for discrete structures such as sequences, partitions, graphs, finite fields and geometries, and experimental designs. Prereq: 323 or consent of instructor.


425 Statistics (3) Derivation of standard statistical distributions including t, F, and chi-square; independence of sample mean and variance, basic limit theorems, point and interval estimation, Bayesian estimates, statistical hypothesis testing, Neyman-Pearson theorem; likelihood ratio and other parametric and non-parametric tests; sufficient statistics. Prereq: 325.


443 Complex Variables I (3) Functions of a complex variable, elementary properties, analytic functions, Cauchy-Riemann equations, power series, Laurent expansion, residues and contour integrals. Prereq: 341 or consent of instructor.

444 Complex Variables II (3) Applications of complex variables to steady-state temperatures, electrostatics, and fluid flow. Prereq: 443.

445-446 Advanced Calculus I, II (3,3) Introduction to the theory of sequences, series, differentiation, and Riemann integration of one or more variables. Prereq: 341 or consent of instructor.

447-448 Honors: Advanced Calculus I, II (3,3) Honors version of 445-446. Prereq: 341 or consent of instructor.

451 Topics in Algebra (3) Topics chosen from number theory and the theory of polynomial equations, such as the quadratic reciprocity law and Sturm separation. Prereq: 351.

453 Matrix Algebra II (3) Advanced topics in matrix theory, including the Jordan canonical form. Prereq: 251.

455-456 Abstract Algebra I, II (3,3) Introduction to algebraic structures such as groups, rings, fields, vector spaces and linear transformations. Prereq: 351 or consent of instructor.

460 Geometry (3) Axiomatic and historical development of Euclidean, and hyperbolic geometry stressing proof technique and critical reasoning. Models of Non-Euclidean geometries. Prereq: 141-142 and 221, or consent of instructor.

461 Topology (3) Includes topology of line and plane, separation properties, compactness, connectedness, continuous functions, homeomorphisms, connectedness, and topological invariants. Prereq: 341 or consent of instructor.

471 Numerical Analysis (3) Introduction to computational instability, and rounding. Interpolation and approximation by polynomials, splines, numerical integration, and quadrature. Prereq: 241, 323 or numerical solution of initial and boundary value problems of ordinary differential equations. Prereq: 371. (Same as Computer Science 471)


490 Readings in Mathematics (1-3) Open to superior students with consent of department head. Independent work under faculty guidance. May be repeated. Maximum 9 hours. Prereq: Agreement of faculty mentor to supervise independent work.

499 Seminar in Mathematics (1-3) Topics will vary. Will require out-of-class projects and in-class presentations by students. Students must register for the number of credit hours announced for a particular seminar. May be repeated. Maximum 9 hours. Prereq: Consent of instructor.

MEDICAL BIOLOGY (661)

410 Laboratory Safety Education (2) Preparation for work with chemicals. Emphasis on identification of corrosive chemicals, isotopes, pathogens, poisons, and equipment will be discussed. Techniques of safe operation and handling will be presented.

411 Undergraduate Research Participation (1-3) Experience in active biomedical research projects under supervision of faculty. Students in pre-medicine and other biology majors may conduct their own research projects within designated areas. Prereq: Junior or senior standing; prior consent of faculty member. May be repeated. Maximum 9 hours. Satisfactory/No Credit only.

MEDICAL TECHNOLOGY (669)

410-411 Medical Microbiology (4,4) Laboratory work in bacteriology, mycology, and parasitology. Emphasis on pathogenic bacteria and fungi, their sources, methods of culture, techniques of identification, and evaluation of antibiotic sensitivity. Gross and qualitative chemical examination of feces and methods of identification of protozoa and helminth parasites of man.

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 the analysis of common blood tests, and analysis of blood and other body fluids for enzymes, hormones, and other constituents of clinical importance, utilizing both automated and manual techniques, physical characteristics, detection, and use
of short half-life radioactive materials for in vivo procedures such as radiomunohasay which utilize radioisotopes.

430-431 Hematology and Clinical Microscopy (4, 4) Principles, theories, and instrumentation in qualitative and quantitative evaluation of cellular elements of blood and other body fluids; factors of hemostasis, quantitative and qualitative blood cells, and role of clotting factors. Emphasis on microscopic identification of cells and the significance and correlation of laboratory data.

440-441 Immunohematology (3, 3) Theory and practice in blood bank operation. Erythrocyte antigens and their normal and abnormal immunity. Standard technical procedures, including blood typing, cross-matching, antibody detection, and preparation of blood components for transfusion. Safety control methods standardized to efficient blood bank.

450 Clinical Serology and Immunology (2) Performance and interpretation of broad range of clinical serological and immunological procedures with emphasis on principles and clinical correlation. Formal lecture series included.

470 Orientation and Basic Techniques (1) For facilitation of students from campus to hospital community and clinical laboratory, introduction to medical terminology, ethics, and health team concept. Orientation to basic techniques including procedures for collection and handling of specimens, principles of operation of many laboratory instrumentation, review of laboratory math, and introduction to quality control procedures. Portions of course extend over entire clinical year.

480 Principles of Supervision and Education in Medicine and Surgery (3) Principles of management, supervision, and education theories and methods. Comprehensive examination covers entire course.

MEDIEVAL STUDIES (674)

201 Medieval Civilization (3) Introduction to basic themes in the medieval experience, approached from interdisciplinary points of view and including philosophy and religion, art, architecture, and literature. 2 hours and 2 labs.

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, rhetorical, lyric, epic, biographical. Includes Augustine’s Confessions, Boethius’ Consolation, St. Gregory’s Life of St. Benedict, The Life of Charlemagne, etc. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

262 Medieval Culture: Readings from the Later Middle Ages, 1000-1500 (3) Critical analysis and interpretation of selected works from the later medieval period. Focuses on romantic, allegorical and mystical writings from the high and later Middle Ages, e.g., the Song of the Nibelungen, the Romance of the Rose, St. Bernard’s Commentary on the Song of Songs, Peter Abelard’s History of My Calamities. Should be taken in sequence with 261. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

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 1500 (3) Same as Art 371.

372 Northern European Painting, 1350-1600 (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.

403 Seminar in Medieval Studies (3) Interdisciplinary treatment of selected topics. Content varies. May be repeated. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

410 Medieval French Literature (3) Same as French 410.

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.

210 General Microbiology (3) General properties of bacteria and viruses including physiology, metabolism, genetics, applied bacteriology, pathogenesis, and immunity. May not be used as part of the major in microbiology. 2 hours and 2 labs.


319 Introductory Microbiology Laboratory (1) Basic techniques for isolation, cultivation, and identification of microorganisms. Coreq: 310, F, Sp.

400 Laboratory Problems in Microbiology (2-4) Research projects under the direction of a faculty member. May not be used for credit toward requirements for a major. May be repeated. Maximum 5 hours. Satisfactory/No Credit only. Prereq: Consent of instructor. E, F, Sp.

410 Physiology and Genetics of Bacteria (3) Modern concepts of the structure and function of the bacterial cell, including metabolism, energy flow, and the transmission and expression of genetic information. Prereq: 310, F.

419 Bacterial Physiology and Genetics Laboratory (1) Laboratory exercises designed to accompany 410. Coreq: 410, F.

420 Pathogenic Bacteriology (2) Disease producing microorganisms including bacteria, rickettsia, and chlamydia. Prereq: 310. Sp.


430 Immunology (2) Principles of inflammation and immunity; immunoglobulin structure and theories of formation and diversity; complement, hypersensitivities, cell cooperation and recognition in immune mechanisms; soluble factors. Prereq: Biology 220. (Same as Zoology 430). Coreq: 420. F.

438 Immunology Laboratory (1) Laboratory exercises designed to accompany 430. Coreq: 430. (Same as Zoology 439). F.

440 Virology (3) Pathogenesis and molecular biology of viruses. Prereq: 310. F.

449 Virology Laboratory (1) Laboratory procedures for isolation, handling, and culturing of animal viruses. Prereq: 310. Coreq: 440. F.


480 Mycology (3) Morphology, physiology, genetics, and taxonomy of yeasts and molds; pathogenesis of disease causing fungi. Prereq: 310. Sp.

489 Mycology Laboratory (1) Laboratory exercises designed to accompany 480. Coreq: 480. Sp.


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 application of current knowledge. Historical background, impact on society, predictions of the future, and the basis of moral and ethical judgments. May be repeated. Prereq: Consent of instructor. Letter grade only. F, Sp.

497 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 application of current knowledge. Historical background, impact on society, predictions of the future, and the basis of moral and ethical judgments. May be repeated. Prereq: Consent of instructor. Letter grade only. F, Sp.

MILITARY SCIENCE (688)

110 Basic Military Science (3) Formation and functioning of the American defense establishment, customs and traditions of the army, application of the principles of warfare, and course terminology. Prereq: Introduction to quality control procedures. Portions of course extend over entire clinical year.

120 Leadership Development Techniques (2) Introduction to basic leadership theory, human motivation theory, and principles of efficient and effective leadership. Application of theories and principles in individual and group exercises. Prereq: 110 or consent of the Professor of Military Science. Letter grade only. F, Sp, Su.

200 Basic Military Studies - 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; age 22 or under; basic army officer; have at least two years remaining to complete degree (undergraduate or graduate); physically qualified; under thirty years age at time of commissioning; 3 or 4 years of JROTC (or 120, 210, 220 completion (or 200 completion (or Basic training Completion (or regi- ment course structure of 310, 320, 200, 410, 420, 400. Letter grade only. 3 hours and 1 hour lab. F.

320 Advance Military Studies II (4) Applied leadership including operation of the military team, electronic communications, land navigation, small unit leadership, internal defense development, field trips, and leadership laboratory. Philosophy of organization and organization of military in tactical and administrative roles. Prereq: United States citizen; must have at least 30 credit hours passed and have at least two years remaining to complete degree (undergraduate or graduate); physically qualified; under thirty years age at time of commissioning; 3 or 4 years of JROTC (or 110, 120, 210, 220 completion (or 200 completion (or Basic training Completion (or regi- ment course structure of 310, 320, 200, 410, 420, 400. Letter grade only. 3 hours and 1 hour lab. F.

328 Advance Military Studies II (4) Applied leadership including operation of the military team, electronic communications, land navigation, small unit leadership, internal defense development, field trips, and leadership laboratory. Philosophy of organization and operation of military in tactical and administrative roles. Prereq: 310 or consent of instructor. Letter grade only. F, Sp, Su.

400 Advance Camp-Practicum (4) 240 contact hours of instruction and evaluation at Ft. Lewis, Washington during the summer between the Junior and Senior year. Prereq: 310, 320. Letter grade only. F, Sp, Su.

410 Command and Staff Functions (4) Command and staff duties and relationships including logistics, personnel systems, efficiency reports, correspondence, training management, briefings, counselling, strategic force planning, 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, ethics, reasoning, and legal implications, with special emphasis on leadership, military justice system, individual leadership, Law of Land Warfare. Prereq: 310, 320 and 400,
482 Internship II: A Great K-12 (3-6) Demonstration of professional competence in planning, instruction and classroom management. Internship is completed in local public schools. Prerequisite: Admission to Teacher Education Program. Satisfactory/No Credit only. Sp

490 Special Topics in Music Education (1-3) Prerequisite: Consent of instructor. May be repeated. Maximum 9 hours. Letter grade only. E

493 Independent Study in Music Education (1-5) Prerequisite: 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 330. Intended for Elementary Education majors. Prerequisite: 300 or consent of instructor. Letter grade only. Sp

MUSIC ENSEMBLE (708)

361-501 Woodwind Choir (1,1) May be repeated.
303-503 Small Jazz Ensemble (1,1) May be repeated. Maximum 12 hours.
360-504 Jazz Ensemble (1,1) May be repeated. Maximum 12 hours.
365-505 Studio Orchestra (1,1) May be repeated. Maximum 12 hours.
366-506 Trombone Choir (1,1) May be repeated.
309-509 Tuba Ensemble (1,1) May be repeated.
310-510 Percussion Ensemble (1,1) May be repeated.
311-511 Marimba Choir (1,1) May be repeated.
312-512 Baroque Ensemble (1,1) May be repeated.
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.
352-532 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 Choir (1,1) May be repeated.
383-583 Men's Chorale (1,1) May be repeated.
389-589 Women's Chorale (1,1) May be repeated.
399-599 Accompanying (1,1) May be repeated.

MUSIC GENERAL (698)

100 Fundamentals of Music (3) Theory and practice of basic elements of music. Writing emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

110 Music Appreciation (3) Developing the aural skills of the Western music through its historical development and music history from the 20th century. Non-music majors. Writing emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

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

130 Music Performance (3) Individualized course of study combining participation in a University musical ensemble with collaborative study of an instrument or voice. One of the applied study (Music Performance 103-440) and ensemble rehearsals as scheduled (Music Ensemble 301-389). May be repeated once for credit. Requires enrollment in approved music course. For non-majors only. Prerequisite: Performing ability on an instrument or voice.

200 Solo Class (0)
301 Junior Recital (0)
401 Senior Recital (0)
411 Lecture Recital (0)

421 Special Topics in Performance (1-3) Prerequisite: Consent of department head. May be repeated. Maximum 4 hours.

431 Special Topics in Pedagogy (1-3) Prerequisite: Consent of department head. May be repeated. Maximum 4 hours.

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

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. Prerequisite: Consent of instructor.

410 Music History Genre (3) Topics vary. May be repeated for credit. Maximum 6 hours.

420 History of Opera (3) Dramatic, vocal, and orchestral elements in opera of Italian, French, and German schools. 1600-present.

430 Symphonic Literature (3) Survey of literature for orchestra from Baroque to the present, with emphasis on the evolution of the symphony.

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

450 Composer Seminar (3) Life and works of a single composer. Instructor varies.

460 Music Aesthetics (3) Nature of music and musical experience, sense perception and emotions, music, and role of artist in society. Aesthetic viewpoint of individuals and historical eras through selected writings. Writing emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

480 Music in Christian Worship (3) Music traditions in Christian worship, including hymnody.

490 Church Music Methods and Administration (3)

493 Independent Study (1-15) Prerequisite: Consent of department head. May be repeated for credit.
310 Jazz Piano I, II, (1,1) Harmonic language of jazz. Interpretation of chord symbols, formulae for voicing chords, chord progressions, and fundamental melody employing improvisation for right hand. Must be taken in sequence.

310-140 Jazz Piano I, II (1,1) Harmonic language of jazz. Interpretation of chord symbols, formulae for voicing chords, chord progressions, and fundamental melody employing improvisation for right hand. Must be taken in sequence.

310-120 Theory I, II (3,3) Materials of music including improvisation, hymn playing, and accompanying. Prereq: 230 and organ proficiency at the 200 level.

310-320 Church Service Playing II, III (1,1) Continuation of 240. Prereq: 240.

330 Sight Reading at the Keyboard (1) Prereq: Consent of instructor.

410 Early Keyboard Literature (2) Keyboard music through the baroque period, with primary emphasis on music for the harpsichord. Prereq: Music History 210-220.

420-430 Piano Literature I, II (2,2) 420-From 1750 to middle 19th century. 430-Middle 19th century to the present.

440-450 Piano Pedagogy I, II (2,2) Pedagogical methods and materials related to the development of principles of learning; specific programs based on pupil aptitude and background; collaborative teaching experience. Must be taken in sequence. Prereq: Consent of instructor.

460-470 The Organ and Its Literature I, II (3,3) Development of the organ and organ literature from the Middle Ages to the present; problems of style and interpretation; pedagogical literature and methods; organ design. Prereq or Coreq: Music History 220 and consent of instructor.

480 Teaching Class Piano (2) 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.

495 Suzuki Piano Method II (2) Study of the psychology, procedures, and literature of the Suzuki Piano Method. Prereq: Consent of instructor.

MUSIC PERFORMANCE (713)

103-203-303-403-503 Flute (1-4) May be repeated.

105-205-305-405-505 Oboe (1-4) May be repeated.

110-210-310-410-510 Bassoon (1-4) May be repeated.

115-215-315-415-515 Clarinet (1-4) May be repeated.

120-220-320-420-520 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.

150-250-350-450-550 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.

175-276-376-476-576 Electric Bass (1-4) May be repeated.

179-279-379-479-579 Guitar (1-4) May be repeated.

180-280-380-480-580 Piano (1-4) May be repeated.


190-290-390-490-590 Organ (1-4) May be repeated.

254-354-454-594 Composition (1-3) May be repeated. Prereq: Consent of instructor.

395-495-595 Composition with Electronic Media (1-3) May be repeated. Prereq: Consent of instructor.

496 Composition for Media (2) May be repeated. Prereq: Consent of instructor.

499 Improvisation (1-2) May be repeated. Prereq: Consent of instructor. Cannot be used to satisfy applied music requirement.

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.


290 Composition 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 Instrumentation (3) Basic techniques in scoring for voices; brass, woodwind, and string choirs; and percussion. Prereq: 220.

390 Synthesis Techniques (3) Studio and real-time applications of synthesizers. Historical background, theoretical concepts, equipment interface and usage, analysis of sounds and compositions. Prereq: 250 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 prerequisite course for graduate students. Prereq: Consent of instructor.

420 Orchestration (3) Advanced techniques in instrumental writing with emphasis on scoring for the concert orchestra. Prereq: 320.

430-440 Counterpoint I, II (2,3) 430-Species counterpoint and modern applications 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.

493 Independent Study in Music Theory (1-5) 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 music styles. 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.

315 Clinical Nursing Theory (2) Application of nursing theories, principles, and concepts to care of hospitalized clients. Coreq: 360, 304. For RN's only. Satisfactory/No Credit only. Sp

317 Wellness and Lifestyle (3) Models of wellness and holistic health within the framework of modern medicine, eastern, and western philosophies, and recent discoveries about high-risk interactions of mind and body. Biopsychosocial interactions of lifestyle and genetic risk factors for cardiovascular, metabolic, and mental health. Understanding of potential longevity. Process of lifestyle change 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.

390 Clinical Practice Elective (1-3) Supervised clinical practice in acute care settings; further development of clinical practice skills is emphasized. Prereq: 311. Satisfactory/No Credit only. Sp

401 Family Nursing Health (6) Nursing needs of families in health and in crisis. Provision of comprehensive care to families in the childbearing and childrearing phases. Theoretical and clinical applications. Composition of theories of human growth and development, family dynamics, and crisis intervention to provision of nursing care to families experiencing a normal child birth and to those experiencing such health problems or complications as congenital anomalies, high risk, birth, disturbed parent-child relationships, or gynecologic disturbances. 3 lectures, 3 lab. Prereq: All 300 level nursing courses. F

402 Family Health Nursing Theory (3) Theoretical component of 401. For RN's only. Prereq: 312. F

403 Community Health Nursing (4) 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. 2 lectures, 2 lab. Prereq: All 300 level nursing courses. F

405 Professional Nursing Seminar (2) Critical examination of legislative, legal, ethical, social, and educational issues and trends that have immediate or long-range implications for professional nursing practice. Prereq: Senior standing. For nursing majors only. Sp

409 Nursing Management and Strategies (8) Management and leadership principles and their application to client care. Course topics include quality assurance procedures, staffing patterns, nursing service delivery models, nursing practice standards, and evaluation of nursing practice; opportunities are provided for development of entry level nursing management role. 3 lectures, 3 lab. Prereq: 10 credits of 400 level nursing courses. Sp

411 Psychosocial Long-Term Nursing (6) Nursing needs of clients whose health problems are of a developing, behavioral, or long-term nature. Equal emphasis on prevention, wellness promotion, and rehabilitation. Nursing laboratory/clinical experiences with a psychosocial approach to client care. Prereq: 304. For a variety of acute, extended care, and rehabilitation facilities. 3 lectures, 3 lab. Prereq: All 300 level nursing courses. Sp

412 Psychosocial Long-Term Nursing Theory (3) Theoretical component of 411. For RN's only. Prereq: 312. Sp

414 Community Mental Health Nursing (6) Nursing needs of clients and groups with psychosocial and/or long-term nursing problems. Coreq: RN status or consent of instructor. No credit for students who have taken 302, 305, 311 or 312. F

415 Family/Community Health Nursing (6) Applicability of the nursing process to individuals, families, groups in the childbearing/rearing stages of development. Clinical experiences are provided in a variety of hospital and community settings for concepts and techniques. All 300 level nursing courses. For non-nurse MSN students only. Sp

450 Physiological Principles (3) Concepts and principles of normal human body function and tissue and organ physiology as a basis for integration of system physiology and for understanding pathophysiological mechanisms. Prereq: RN status or consent of instructor. No credit for students who have taken 302, 305, 311 or 312. 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. F

452 Oncology Nursing (3) In-depth exploration of cancer and its related pharmacokinetics 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. F

470 Special Topics (1-3) Indepth study of selected nursing topics, problems, or issues not covered in other courses. Topics determined by availability of students and faculty. Prereq: Consent of instructor. F

493 Independent Study (1-3) Nursing or health-related topic not covered in other nursing courses. Prereq: Senior standing or permission of instructor.

NUTRITION AND FOOD SCIENCES (725)

100 Introductory Nutrition (3) Nutritional concepts; current consumer issues in the United States; nutritional needs through life cycle; international nutrition concerns and/or issues. A student who has received credit for NFS 107 or 300 may not receive credit for this course. F

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) Interdependence of people on this planet; social and psychological issues of food selection, nutrition, and community health nursing. 2 lectures, 2 lab. Prereq: NFS 107 and Micro 210. 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 NFS majors. 2 hours and 2 labs. F

291 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 NFS majors. 2 hours and 2 labs. F

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 230. A student who has received credit for NFS 107 or 300 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

311 Science of Food (4) Chemical and physical properties of food related to functional and nutritional properties; utilization and conversion of foods; effects of processing on food; application of food principles to meal planning and presentation; computer applications. Prereq: 100 or 107, 201, Micro 210. 3 hours and 1 lab. F

312 Science of Food (4) Chemical and physical properties of proteins and lipids related to functional and nutritional properties of food related to functional and nutritional properties; utilization and conversion of foods; effects of processing on food; application of food principles to meal planning and presentation; computer applications. Prereq: 100 or 107, 201, Micro 210. 3 hours and 1 lab. F
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 plant physiology including plant anatomies, growth, climatic influences on plant culture, pest identification and control, and flower classification. Prereq: 100 or 107, 201, Zoology 230. F

313 Advanced Nutrition (4)
Integrated knowledge of physiological chemistry and physiology applied to understanding food and nutritional problems. Prereq: 100 or 107, 201. Zoology 230. F

410 Professional Issues in Dietetics (1)
Dietetic registration, licensure, third party payments; dietetic practice, nutrition care and administration, patient care, food science, nutrition education, professional growth and development. Prereq: 100 or 107, 201, Zoology 230. F

411 Nutrition in Disease (4)
Metabolic processes of diseased organs and/or tissues; dietary modifications required. Prereq: 311, 312, 313. F

412 Food and Nutrition Resources Management (3)
Integration of community food and nutrition resources; geographic, social, economic, educational, cultural, and environmental factors associated with food and nutrition problems and the need for services by individuals in community residence. Prereq: 411. Sp

413 Experimental Food Science (3)
Individual and group laboratory experimentation in food science, microcomputer applications. Prereq: 311, 312, PSSc 471. 1 hour and 2 labs. F

414 Nutrient-Dietary Interactions (2)
Nutrient effects on food safety and toxicity of drugs; drug effects on absorption, metabolism of nutrients. Prereq: 300 or equivalent. A, Sp

423 Foodservice Systems Design and Equipment (3)
Physical facility design; production, delivery system analysis, equipment selection, purchase. Prereq: HRA 320, 321 or consent of instructor. A, F

450 Special Topics in Nutrition and Food Sciences (1-3)
Developments, issues and problems in Nutrition and Food Sciences; topics variable. Prereq: Junior or Senior standing in NIFS or consent of instructor. May be repeated. Maximum 3 credits. E

487 Honors: Nutrition and Food Sciences (1-3)
Senior project. Prereq: Senior standing and consent of instructor. E

492 Field Experience: Nutrition and Food Sciences (1-3)
Prereq: Junior or Senior standing, consent of instructor. Satisfactory/No Credit only. E

493 Directed Study: Nutrition and Food Sciences (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 plant design and management in the landscapes, selection and use of herbaceous plants and turfgrass species. 3 hours. F

210 Floral Design (2)
Principles and techniques of basic floral arranging with emphasis on arrangements for home and special use. Lab fee will be charged. 2 hours. F

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 hours. F

230 Interior Plants (2)
Identification, culture, design application, and propagation of foliage plants used in the interior environment. Introduction to interior space management. 2 hours. F

280 Fundamentals of Landscape Design (3)
History of landscape design as it relates to contemporary applications. Awareness and sensitivity to the landscape: basic geographic skills and design theory with an emphasis on residential landscape planning. Introduction to landscape planning in the context of landscape materials and planning design. 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 plant physiology including plant anatomies, growth, climatic influences on plant culture, pest identification and control, and flower classification. Prereq: 100 or 107, 201, Zoology 230. F

313 Advanced Nutrition (4)
Integrated knowledge of physiological chemistry and physiology applied to understanding food and nutritional problems. Prereq: 100 or 107, 201. Zoology 230. F

410 Professional Issues in Dietetics (1)
Dietetic registration, licensure, third party payments; dietetic practice, nutrition care and administration, patient care, food science, nutrition education, professional growth and development. Prereq: 100 or 107, 201, Zoology 230. F

411 Nutrition in Disease (4)
Metabolic processes of diseased organs and/or tissues; dietary modifications required. Prereq: 311, 312, 313. F

412 Food and Nutrition Resources Management (3)
Integration of community food and nutrition resources; geographic, social, economic, educational, cultural, and environmental factors associated with food and nutrition problems and the need for services by individuals in community residence. Prereq: 411. Sp

413 Experimental Food Science (3)
Individual and group laboratory experimentation in food science, microcomputer applications. Prereq: 311, 312, PSSc 471. 1 hour and 2 labs. F

414 Nutrient-Dietary Interactions (2)
Nutrient effects on food safety and toxicity of drugs; drug effects on absorption, metabolism of nutrients. Prereq: 300 or equivalent. A, Sp

423 Foodservice Systems Design and Equipment (3)
Physical facility design; production, delivery system analysis, equipment selection, purchase. Prereq: HRA 320, 321 or consent of instructor. A, F

450 Special Topics in Nutrition and Food Sciences (1-3)
Developments, issues and problems in Nutrition and Food Sciences; topics variable. Prereq: Junior or Senior standing in NIFS or consent of instructor. May be repeated. Maximum 3 credits. E

487 Honors: Nutrition and Food Sciences (1-3)
Senior project. Prereq: Senior standing and consent of instructor. E

492 Field Experience: Nutrition and Food Sciences (1-3)
Prereq: Junior or Senior standing, consent of instructor. Satisfactory/No Credit only. E

493 Directed Study: Nutrition and Food Sciences (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 plant design and management in the landscapes, selection and use of herbaceous plants and turfgrass species. 3 hours. F

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Principles and techniques of basic floral arranging with emphasis on arrangements for home and special use. Lab fee will be charged. 2 hours. F

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History of landscape design as it relates to contemporary applications. Awareness and sensitivity to the landscape: basic geographic skills and design theory with an emphasis on residential landscape planning. Introduction to landscape planning in the context of landscape materials and planning design. Prereq: 110, 220 or consent of instructor. 1 hour and 2 labs. E
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.)

349 War and Morality (3) Moral justification for war (just ad bellum); legal and moral constraints in war (just in bello).

350 Aesthetics (3) Philosophical discussion of art.

353 Philosophy and Literature (3) Nature of literature; philosophical assumptions in literary works.

360 Introduction to Philosophy of Science (3) Standard topics in philosophy of science such as method; nature of laws and theories; problem of induction, explanation, measurement. No background in logic is presupposed.

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

382 Philosophy of Feminism (3) Various feminist theories and 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: at least one in-class essay examination and 3000 words of writing outside the classroom.

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: 6 hours of philosophy or consent of instructor. When content varies, may be repeated. Maximum 9 hours.

425 American Philosophy (3) Categorical to early 20th Century. Prereq: 9 hours of philosophy or consent of instructor. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the class.

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 nature of explanation and causation, the status 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 approaches to 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 from the 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.

491 Foreign Study (1-15)

492 Off-Campus Study (1-15)

493 Independent Study (1-15)

PHYSICAL EDUCATION (764)

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 involving skill analysis and various styles of teaching.

104 PE Education Major: Gymnastics (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 teaching techniques.

106 PE Major: Track and Field (1) Basic skills of track and field with consideration of techniques for effective teaching.

200 Practicum I (1-6) First practicum experiences to support and clarify career goals. May be repeated. Prereq: Consent of instructor and progression to the major.

271 PE Major: Soccer/Softball (1) Basic fundamentals, including individual and team skills with consideration of techniques for effective teaching.

272 PE Major: Volleyball (1) Intermediate and intermedia volleyball skills, general rules, 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 II (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 applications 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 body fat, nutrition, and stress. Emphasis on evaluation of current status with recommendations for change toward reasonable health-related goals.

290 Human Motor Behavior (3) Theories and principles explaining motor behavior; psychological factors related to anterior and motor skill acquisition and performance. Prereq: At least sophomore standing.

291 Sport in American Society (3) For all university undergraduates on the study of sport in American society from a sociological perspective. (Same as Sociology 291.)

292 Field Studies I (3) Builds on observational techniques from Physical Education Orientation. Provides opportunities to lead, instruct, manage and test individuals and/or small groups in K-12 physical education settings. Includes peer teaching and video-taped analyses. 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. Prereq: Consent of instructor.

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 times to the early twentieth century civilization. Prereq: Admission to Teacher Education Program or progression to the major.

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

325 Athletic Training Techniques (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 within 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.

335 Approaches to Physical Education for Children (3) Contemporary approaches with emphasis upon movement education. Prereq: Admission to Teacher Education Program.
345 Movement Education (3) Educational games, sports, dance, and gymnastics for children. Prereq: Admission to Teacher Education Program.

350 Sport Management: Theory to Practice (3) An overview of the managerial theories and applications including responsibilities and practices associated within the sport industry. This course will deal primarily with the sport enterprise in the private sector.

356 Motor Development (3) Evolution of human motor behavior in the context of structural/motor 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: Admission to Teacher Education Program or progression to the major.

372 Philosophy of Sport and Physical Education (3) Theories of reality and value as they apply to sport with emphasis on ethical issues. Prereq: Admission to Teacher Education Program or progression to the major.

380 Special Topics (1-3) Study in selected disciplinary or professional areas of Physical Education. May be repeated. Credit/No Credit only. Prereq: Progression to the major.

391 Psychology of Coaching (2) Major topics and theories dealing with psychological factors affecting and relating to sport performance, with practical implementation of principles to teaching and coaching. Prereq: Admission to Teacher Education Program or progression to the major.

406 Sociology of Sport (3) Social meaning, organization, processes, and roles of sport. Differences between sport and play and games, stratification and sport, sport as an occupation, place of sport in mass culture, sport subcultures, and social influences of sport and cultural milieu. Prereq: 391 or Sociology 295, or permission of instructor. (Same as Sociology 405.)

409 Measurement and Evaluation of Physical Education (3) Methods of measurement and evaluation in Physical Education. Critique, selection, and administration of appropriate affective, 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.

414 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

415 Adapted Physical Education (3) Developmental disabilities, other physical/handicapped and variant/invariant characteristics of specific syndromes and/or other disabilities in general motor development/programming for those with special education needs.

412 Practicum in Adapted Physical Education (1) Teaching those with special education needs. Observations on appropriate stages of physical education, and on programs and strategies for teaching 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 high educational risk and a section with experiences relevant to student needs with a physical education teacher. Prereq: Zoology 230, progression to the major. Recommended that 415 be taken concurrently. (Same as Health 414.)

415 Health-Related Fitness Testing and Evaluation (1) Measurement and evaluation of cardiorespiratory function, body composition, flexibility, low back and stress. Prereq: Zoology 230, progression to the major. Recommended that 415 be taken concurrently. (Same as Health 415.)

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 strategies of teaching to teaching/learning environment including planning, presenting, and evaluating lessons concerning knowledge, strategies, and skills for physical activity, games, and sport. Montessori teaching, macro teaching, and field experiences. Prereq: Minimum 6 credits in Physical Education Major activity courses and admission to Teacher Education Program.

422 Applied Kinesiology (3) Study and emphasis of human movement with emphasis on biomechanical principles and their application to movement and neuromuscular function. Prereq: 322.

423 Readings in Physical Education (2) Two sections including an on-campus lab program. Prereq: Admission to Teacher Education Program.

426 Practicum II (1-6) Supervised experience in sports management or exercise/fitness areas. May be repeated. Credit/No Credit only. Prereq: 260, progression to the major, and consent of instructor.

424 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 or progression to the major.

450 Field Studies II (3) For physical education majors to design and implement learning units and evaluation techniques appropriate for K-12 physical education settings. Includes video-taping of learning experiences in the school setting. Prereq: 392 or 466 and admission to Teacher Education Program.

466 Motor Development Laboratory: Preschool or Primary (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: 335 and admission to Teacher Education Program.

480 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 440. 2 lectures and 1 lab. (Same as Zoology 480.)

481 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

482 Internship II: Grades K-12 (3-6) Demonstration of professional competence in planning, instruction, and classroom management. Internships are 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 prerequisite hours and progression to the major; additional prereq: for Exercise Physiology/Fitness Option: 325, 414, 415.

493 Directed Independent Studies (1-6) Independent study in a specialized area with physical education. May be repeated. Maximum 9 hours. Prereq: Consent of advisor and progression to the major. Satisfactory/No Credit or letter grade.

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 121-131 is equivalent course for engineers. Must be taken in sequence. Coreq: Mathematics 141-142. 2 hours lecture, 2 hours lab.

PHYSICS (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 and applications of wave motion and vibration, development and applications are developed and fields such as solar systems, atomic and molecular behavior, radiation, dynamics, and phenomena. 142: Principles applied to topics such as stellar and galactic phenomena, nuclear energy, cosmology, and relativity. Unifying mathematical principles underlie physical applications. Readings from important original papers and studying problems and order of magnitude calculations. Three lectures and four hours outside the classroom. 402 Forefront of Physics (2) Modern developments in physics; various forms of quantum mechanics, quantum electrodynamics, and recent theories of particles, fields, and their interactions. Unsolved questions in physics, experiments of current interest, readings in recent literature, and applications in other fields. Formal oral report and term paper. Writing emphasis: course at least one in-class essay examination and 3000 words of writing outside the classroom.

151-152 Elements of Physics for Computer Scientists (4,4) For students majoring in computer science. Principles of mechanics, heat, thermodynamics, 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, time. Basic acoustics of instruments and voice. 3 hours lecture including demonstration lab. 185 Principles of Physics: Electricity and Magnetism (3) For engineers and liberal arts majors in mathematics and the physical sciences. Required of all engineering students. Prereq: 131-132 or Basic Engineering 121-121. Coreq: Mathematics 231. 2 hours lecture, 3 hours lab/recitation.

221-222 Elements of Physics (4,4) Basic physical principles and applications required in pre-medical, pre-dental, pre-pharmacy and pre-veterinary programs. 221: Mechanics, heat, wave motion, and optics. 222: Electricity and magnetism, modern physics. Must be taken in sequence. 3 hours lecture. Coreq: Mathematics 212-122 or 141-142 or 151-152. 3 hours lecture and demonstration.

231 Fundamentals of Physics: Electricity and Magnetism (3) For students majoring in computer science. Principles of mechanics, heat, thermodynamics, electricity and magnetism, light, relativity, and modern physics. Must be taken in sequence. Coreq: Mathematics 141-142. 3 hours lecture, 2 hours lab.

237 Honors: Electricity and Magnetism and Light (4) Honors course for selected students admitted on basis of performance in 131-132, 137-138 or Basic Engineering 131-132. Coreq: Mathematics 231. 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 or 312 and consent of instructor. 340 Relativity and the Structure of the Atom (3) Special Relativity: Lorentz transformation 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 physics; basic atomic structure and model of the atom. Fundamental concepts of modern physics and their applications to atomic systems. Prereq: 231. 342-Subatomic physics; nuclei, nuclear structure, 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 simple electronic systems with emphasis on application of simple circuits to instrumen- tation. 361-Analog electronics, including fundamental network theorems, complex impedance and admittance, frequency response and resonance, feedback, opera-
tional amplifiers, oscillators, and various semiconductor devices, as applied to scientific instrumentation. 362-Digital electronics, including elementary building blocks of relevance to data processing systems, digital to analo-
glog 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: Introductory Physics. May be repeated with consent of department. Maximum 6 hours.

401 Background of Physics (2) Historical development and philosophical foundations of natural science. Classical theories of gravitation, electromagnetism, and relativity. Unifying mathematical principles underlying physical applications. Written report on independent study. Prereq: Senior standing in Physics or consent of instructor. Writing emphasis: course at least one in-class essay examination and 3000 words of writing outside the classroom.


422 Modern Physics (4) Transmission of light in uniform, isotropic media, reflection and transmission at inter-
faces, faces of matter, wave motion and interference effects. Rudiments of Fourier optics 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 425.)

431-432 Electricity and Magnetism (3,3) Electrostatics, magnetostatics, coupled electric and magnetic fields, Maxwell's Equations, electromagnetic waves and radia-
tion. Prereq: 232.

451-452 Techniques of Theoretical Physics (3,3) Methods and general solutions in potential theory, spec-
tral analysis, wave mechanics, specific Sturm-Liouville systems and other selected techniques of theoretical physics. Must be taken in sequence. Prereq: 232 and Mathematics 241 or equivalent.

461-463-465 Modern Physics Laboratory (3,3,3) Variety of experimental techniques, including spectro-
copy, electronic measurements, computer interfacing, resonance, detectors and statistical analysis, applied to experiments in nuclear, atomic, molecular, and solid state systems. Classic experiments in quantum physics for advanced undergraduates. Prereq: 232 and a basic knowledge of circuits.

471-472 Health Physics (3,3) Radiation effects, interaction of electromagnetic radiation with matter, radiation quan-
tities and units, point kernel and extended sources, x-rays and gamma rays, neutron activation, interaction of charged particles with matter, stopping power, range dependence, counting statistics, radiation detection, dosimetry, waste disposal, radiation, safety and environmental protection, radiation biology, and ecology. Prereq: 340 or 341.

490 Senior Seminar (1-3) Topics of current interest. May be repeated with consent of department. Maximum 6 hours.

491 Foreign Study (3-15)

492 Off-Campus Study (3-15) (Same as 491.)

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.

494 Graduate Seminar (1-3)
315 Tennessee Government and Politics (3) Major elements in Tennessee government and politics.

320 State Government and Politics (3) Setting, institutions, and processes of government in the fifty states: general overview of state systems, with emphasis on federalism and inter-governmental relations.

321 Urban Politics and Process (3) Development of politics and policy-making in the modern American city. (Same as Urban Studies 321.)

322 Minority Group Politics in the United States (3) Content varies and is repeated with the consent of the department. Maximum 6 hours. (Same as Afro-American Studies 322.)

330 Law in American Society (3) Law as a process through which social problems are addressed in the United States. Examples from case law, legislation, and administrative regulation. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

331 Judicial Process (3) Courts as components of political systems, and public policy formulation through judicial decision making.

340 Introduction to Public Administration and Public Policy (3) Public agencies, their organization, personnel, and financial management and administrative responsibility; the policy-making process, political environment. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

350 Political Change in Developing Areas (3) Characteristics and problems of political changes with primary focus on developing areas. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

355 Latin American Government and Politics I (3) Introduction to contemporary conditions in Latin America. (Same as Latin American Studies 355.) Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

361 Politics in Western Democracies (3) Political culture patterns, and institutions of Western democratic systems. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

365 Introduction to International Relations (3) Resource availability, international economics, international security and peace (imperialism, war, diplomacy, the balance of power, international law and international organization.) Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

366 United States Foreign Policy Process (3) Processes whereby United States foreign policy are made and implemented, focusing on interaction within federal bureaucracy and roles of the President, Congress, the media, and public opinion.

370 Contemporary International Problems (3) Analysis of current international events.

374 American Political Thought (3) Major themes and ideas in American political thought related to the development of American political institutions, values, and practices. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

387-388 American Honors Seminar (3-3) Required of honors majors; admission with consent of department.

410 Special Topics in United States Government and Politics (3) May be repeated with consent of department. Maximum 6 hours.


420 Congress (3) Nature, functions, with processes of the United States Congress.

421 Political Attitudes and Opinions (3) Nature, formation, development, and dissemination of politically relevant attitudes and opinions in the American political system.

423 Political Parties and Interest Groups (3) Role of political parties and organized groups in American politics.
PORTUGUESE (811)
111-112 Elementary Portuguese (3,3) Introduction to Portuguese. May not be taken for credit by students with two years of high school or one year college Portuguese. Must be taken in sequence. Language Laboratory required.
211-212 Intermediate Portuguese (3,3) Stresses reading, writing, listening, and speaking of Portuguese to prepare for upper division courses in the language. Must be taken in sequence. Language Laboratory required.
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 300 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, nervous and endocrine systems, and other biological influences on behavior. Prereq: 110 or equivalent, or consent of instructor.
220 Behavior and Experience: Humanistic Psychology (3) Introduction to phenomenological analyses of individuals and their development in natural environments. Prereq: 110 or equivalent, or consent of instructor.
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.
310 Learning and Thinking (3) Survey of theory and findings of research concerning both humans and nonhumans. Prereq: 110 or equivalent and 210 or 220, or consent of instructor.
320 Motivation (3) Survey of theories and related research; discussion of applications. Prereq: 110 or equivalent and 210 or 220, or consent of instructor.
330 Abnormal Psychology (3) Individual and environmental factors in deviant and maladaptive behavior; neurotic and psychotic reactions. Contemporary methods of treatment. Prereq: 110 or equivalent and 210 or 220, or consent of instructor.
359 Laboratory in Human Relations (3) Interpersonal relationships 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.
370 Ethology and Sociobiology (3) Basic concepts in the evolutionary approach to behavior, including application of these concepts 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 other applied topic of interest. 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 hypothesis-testing and statistical inferences. Basic probability concepts; parametric and non-parametric tests. Prereq: Math 110 or equivalent, 210 or 220; and 385 or Statistics 201 or Mathematics 115, or equivalent.
395 Methods of Research in Psychology (3) Fundamentals in the planning and execution 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; and 385 or Statistics 201 or Mathematics 115, or equivalent.
396 Laboratory in Psychology (2-3) Introduction to techniques used in the laboratory to study different topics is 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, 385, 395. May be repeated. Maximum 9 hours.
399 Supervised Research and Field Work (1-3) Field experience in community-based research and service settings. Prereq: 110 and 210 or 220; and 385 or Statistics 201 or Mathematics 115 or equivalent, or consent of instructor. May be repeated. Maximum 12 hours in 399, 489, 491, 492, and 493 combined may be applied toward major.
409 Group Facilitation (3) Study of theory and technique through supervised experience in small groups. Prereq: 359 or consent of instructor. May be repeated. Maximum 6 hours.
410 Sensory Processes and Perception (3) Physiological and psychological theories of perception. Empirical research in psychology. Prereq: Consent of instructor. (Same as Psychology 405.)
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 to physical 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 dynamics and systems theory. Prereq: 360. (Same as Management 440.)
450 Comparative Animal Behavior (3) (Same as Zoology 450.)
459 Comparative Animal Behavior Laboratory (3) Coreq: 450. (Same as Zoology 459.)
461 Physiological Psychology (3) Nervous system and physiological correlates of behavior. Biological basis of emotion, learning, memory and stress. Prereq: 110 or equivalent, 210, and one year of Biology or Zoology introductory sequences or equivalents.
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.
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 Afro-American Psychology or evolution of programs in the community. Prereq: 210 or 220; 389, 489, 491, 492, and 493 combined may be applied toward the major.
489 Supervised Research (1-9) Prereq: Consent of instructor. May be repeated. Maximum 12 hours in 489, 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, 489, 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, 489, 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, 489, 491, 492, and 493 combined may be applied toward the major.
496 Senior Seminar: Great Ideas in Psychology (3) Key ideas that have shaped conceptions of humankind. Exploration of historical development, scientific evolution, and larger social context. Prereq: Consent of instructor and senior standing. Writing-emphasis course. At least two in-class essays and 3000 words of writing outside the classroom.

PUBLIC HEALTH (839)
300 Introduction to Public Health (3) Aspects of public health including discussion of contemporary and controversial health issues.
305 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, Sp
310 Environmental Management and Control (3) Contemporary principles of control of disease-producing agents in our environment. Emphasizes concepts for effective application of control principles to vocational endeavors and/or daily living activities. Includes: Drinking water quality (chemical, physical and biological), waste management (liquid, solid and hazardous), vector control, safe food management, recreational sanitation and safety to include pool management, shelter hygiene (homes, child care, schools, hospitals, etc.), occupational health and safety. F, Sp
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 300 workers. 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 (MHP) majors. F, Sp
480 Special Topics (3) Instructional or research topics to be announced. Prereq: Consent of instructor. May be repeated under different topic. Maximum 6 hours. F, Sp
493 Directed Independent Study (1-3) Individual study of selected issues. Prereq: Consent of instructor. May be repeated. Maximum 6 hours. E

RECREATION AND LEISURE STUDIES (853)
110 Foundations for Leisure Studies and Services (3) Focuses on understanding concepts, principles, and practices relevant to providing leisure services including philosophy, history and theory, programming, economics, leadership, and a survey of leisure services organizations and occupational opportunities. F, Sp
210 Dynamics of Recreation Leadership (3) Theories, practices and concepts as they apply to all roles of recreation leadership.
220 Introduction to Therapies and Medical Terminology (1) Responsibilities of recreation, occupational, physical, horticulture, art, and music therapists. Basic terminology used in medical environment. Sp

250 Specialized Study in Leisure Education (1-3) Focus on various approaches and crisis points in leisure services. Contribution of leisure to mental and physical health. Creative Cooking, Bike Hikes, New Games. E

290 Field Practice (1-2) Supervised practice in approved commercial recreation facilities. Each hour's credit requires 25 hours of work in field agency. For recreation students only. Prereq: Permission of instructor. F

310 Leisure Program Development and Evaluation (3) Essential elements and basic principles involved in organization, administration, marketing, evaluation of various programs, and analysis of development of program objectives, practical and comprehensive program designs and evaluation for populations and facilities. Prereq: 200 or consent of instructor. Sp

320 Analysis of Leisure and Special Populations (3) Principles, concepts, history of development of recreation, leisure services, and leisure careers to special populations. Explanation of legislation, attitudes, barriers to participants, mainstreaming, advocacy, as related to leisure fulfillment. Prereq: 220 or consent of instructor. F

390 Field Practice (1-2) Supervised practice in approved agency offering leisure services. Each hour's credit requires 25 hours of work in field agency. For recreation majors only. Prereq: 290 and permission of instructor. E

410 Maintenance and Management of Recreation and Sports Related Facilities (3) Principles for operation and maintenance of recreation and sports related facilities and management systems. Cost tracking, inventory systems, specialized maintenance techniques, safety guidelines, maintenance management systems and security. Prereq: 110, 310 or consent of instructor. F

420 Principles of Therapeutic Recreation (3) Principles, concepts, and practices in therapeutic recreation including activity analysis, activity and program selection adaptation, individual assessment, treatment plans and professional practices. Prereq: 290 or consent of instructor. Sp

430 Organization and Administration of Leisure Service (3) Principles of administration applied to provision of leisure services offered by public, private and commercial recreation programs and services. Prereq: 290 or consent of instructor. F

440 Dimensions of Private and Commercial Recreation Businesses (3) Nature and function of recreation in private, commercial, and industrial settings. Development of privately managed commercial recreation services offered in leisure market, factors influencing participation, management considerations, and research in commercial recreation. 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 Practicum in Recreation (12) Full-time practice in approved recreation agency. Emphasis on supervisory and administrative procedures. Prereq: 290, 390, senior standing. Satisfaction/No Credit only. E

RELIGIOUS STUDIES (863)

101 World Religions in History (3) Introduction to religion in culture and society, including examination of religious traditions from China, India, and the Mediterranean world. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

102 The Comparison of World Religions (3) Introduction to religion in culture and society, focusing on cross-cultural interpretation and the treatment of common problems within various religious traditions. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

232 Varieties of Religious Community (3) How different forms of religious communities (cults, tribes, sects, monastic orders, denominations, familial, etc.) have sought to reject, reinforce, transform, ignore, or obliterate their culture and traditions. Prereq: 220 or consent of instructor. E

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. E

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

301 Religious Myth, Symbol, and Ritual (3) Distinctive modes of religious expression and analysis of theoretical approaches appropriate to their particular social and cultural functions in religions.

302 Religion of Primitive Peoples (3) Religions of selected non-literate peoples. Role of religion in their social and cultural systems. (Same as Anthropology 302.)

305 Contemporary Religious Thought (3) Major issues, issues, and thinkers in twentieth century religion.

309-310 Elementary Classical Hebrew (3.3) Basic elements of Hebrew phonology, script, morphology and syntax. Introduction to basic elements of text, form, and literary criticism.

311 Ancient Hebraic Religious Traditions (3) Development of ancient Israelite and early Jewish traditions with emphasis on Sinai, First Kingship, and Kingship, and Zion in historical, prophetic and apocalyptic material. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

312 Religious Aspects of Biblical and Classical Literature (3) Ways in which contemporary modes of literary expression appropriate biblical and classical material. Ways in which the western literary tradition has appropriated and recast the biblical and classical heritage. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

313 Religious Aspects of Modern Literature (3) Issues raised for religious inquiry in contemporary literature. Relation of religious and moral considerations to problems of literary analysis; relation between religious language and forms of human expression (symbol, metaphor, myth, image) identified in study of literature. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

315 Reformation Europe, 1500-1650 (3) (Same as History 315.)

316 Topics in Religion and Literature (3) Selected themes that suggest points of intersection between literature and religion in the west. Prereq: 310 or consent of instructor. F

344 Professional Responsibility (3) (Same as Philosophy 344.)

345 Medical Ethics (3) (Same as Philosophy 345.)

351 Introduction to Religion in the United States (3) A representative profile of religion in the United States, organized around selected focal themes or problems.

352 Afro-American Religion in United States (3) Historical and critical examination of formation and development of African American thought and institutions in America. (Same as Afro-American Studies 352.) Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

353 Topics in Afro-American Religion (3) Selected figures, movements, or ideas in African American culture that have been and are being informed by religious sensibilities. (Same as Anthropology 373 and Afro-American Studies 373.) Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

370 Philosophy of Religion (3) (Same as Philosophy 370.)

371 Eastern Religions and Western Thought (3) Comparative study of selected movements, thinkers, and practices of religions, Asian and Western. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

372 Jewish Philosophy and Religion (3) Survey of the development of the major non-Buddhist themes of philosophical and religious thought in Judaism. (Same as Philosophy 372.) Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

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

376 Buddhist Philosophy and Religion (3) Survey of the origins of Buddhism in India and further development of Buddhist philosophy and religion in India, China, Korea, Japan, the countries of Southeast Asia, and beyond. (Same as Philosophy 376.) Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

379 Religion and Philosophy in China (3) Traditional thought of China and its interpretation in the context of contemporary thought as a basis for understanding modern China. (Same as Philosophy 379.) Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

381 Judaism (3) Comprehensive introduction to the history of Judaism and Jewish institutions, their action guidelines for individuals and institutions, their writing occupation to persons and social problems.

390 Ethical Aspects of Leisure (3) Ethical theories and their application to religious traditions, culture, and religious institutions of Judaism, and interactions with modern culture.

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

3983 Historical Aspects of Religious Expression (3) Selected ethical theories and moral teachings of religious communities and thinkers, their action guidelines for individuals and institutions, their writing occupation to persons and social problems.

3984 Professional Responsibility (3) (Same as Philosophy 344.)

3985 Medical Ethics (3) (Same as Philosophy 345.)

3987 Philosophy of Religion (3) (Same as Philosophy 370.)

3988 Eastern Religions and Western Thought (3) Comparative study of selected movements, thinkers, and practices of religions, Asian and Western. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

3995 Buddhism in United States (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: at least one in-class essay examination and 3000 words of writing outside the classroom.
303 Religion in Japan (3) Traditional religious heritage and contemporary expressions of religion in Japan with attention to the relationship of persons to nature, self-mastery and spontaneity, individual and community and secular to sacred. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

384 Zen Buddhism (3) Historical, philosophical, and meditational aspects of Zen. Special emphasis on motifs of emptiness, no-self, and enlightenment and on prac-tice of meditation and the use of the koan. Recommended: Prereq: One or more of the following: 376, 379, 383.

389 Literature of the English Bible (3) (Same as English 389).

390 Topics in Religious Studies (3) Selected figures, themes and issues. Variable content. May be repeated. Maximum 6 hours.

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 traditions of Saṁkhya, 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 through 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, Mokṣha, Dharmashastra, Ramayana, Kathasaritsagara). Prereq: 422 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 Religion and Politics (3) Consent of instructor. May be repeated. Maximum 6 hours.

470 Readings in Religious Studies (3) Consent of instructor. May be repeated. Maximum 6 hours.

RURAL SOCIOLOGY (880)

380 Rural Sociology (3) Topics include cultural vari-ability, reference group theory, social stratification, major social institutions, demographic changes, rural commu-nity and family, and rural industrialization. Prereq: Sophomore standing. F (Same as Sociology 380.)

480 Diffusion of Agricultural Technology (3) Diffu-sion and consequences of agricultural technology as it spreads from scientists to change agents and then to farmers. Innovation-decision process; communicati-on behavior, mass-media, roles of professional change agents, opinion leadership and consequences of tech-nological 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.

226 Russian Philosophical and Theological Thought (3) Development of philosophical and theological 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.)

322 Works of Tolstoy in English Translation (3) War and Peace, Anna Karenina, 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 322.)

326 Special Topics in Russian Literature in English Translation (3) Topics vary and are announced in advance. Students may repeat once. (Same as Russian and East European Studies 326.)

375 Geography of the Soviet Union (3) (Same as Geography 375.)

379 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 use of 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 identifica-tion and study of safety or safety education problems. 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) Prepara-tion of teachers of driver education in schools and colleges. Students are required to teach at least one non-driver. Valid driver's license required. 2 hours and 2 labs. E

442 Advanced Driver and Traffic Safety Education (3) Advanced preparation of teachers of driver education in schools and colleges. Students are required to teach at least one non-driver. Valid driver's license required. 2 hours and 2 labs. Sp

443 Sports and Recreational Safety (3) Accident pre-vention and injury control in sports activities; philosophy of sports safety; human environmental factors and inter-relationships in sports injuries; injury prevention; and decision solution strategies; and contributions of sports medicine to safety. 3 hours and 2 labs. Sp

452 General Safety (3) Principles, practices, and proce-dures in general safety. Safety problems in school, traffic, recreation, industry, home, and other public ar-eas. E

470 Special Topics (1-3) Study in selected disciplinary or professional areas of safety. May be repeated. Maxi-mum 12 hours.

SOCIAL WORK (905)

200 Introduction to Social Work (3) Emergence of the social work profession; professional mission; knowl-edge, skills, and values; practice settings; client groups; helping services, career patterns; practice methods. Designed to assist students to consider their ability for careers in social work.

250 Social Welfare (3) Development, structure and function of the social welfare institution. Analysis of social welfare programs and impact on the institution on society.

310 Social Work Research (3) Scientific method and research strategies to evaluate one's practice or the practice of one's social service delivery. Knowledge of statistical tech-niques required. Prereq: Sociology 392 or Psychology 385, Coreq: 389.
Education 291.

Varieties of Religious Community (3) (Same as Religious Studies 319.)

Interpersonal Communication Processes (3) (Same as Speech 320.)

Sociological Theory (Survey of contemporary issues and problems in sociology with an emphasis on their historical development and their importance for the field. Students are required to form critical appraisals of the topics addressed. 321)

Computers and Society (3) History of computing and computer systems; capabilities of computer applications in various fields; social, cultural, and economic impacts. 330

Sociological Research (Selected issues in philosophy of social science, research design, sampling, methods of data collection, and interpretation. Requires written research report. 331)

Elementary Social Statistics (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. 336)

Class Structure (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. 340)

Race and Ethnicity (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). Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom. 343)

Power and Society (Sociological analysis of the formation and application of nation state policies. Examination of who gets what, why and how. Emphasis on contrasting explanations of the control of the state and the relative autonomy of the state. 344)

Collective Behavior and Social Movements (Collective phenomena leading to social change. Response to disaster, popular crazes, and social protests and development, organization, and function of social movements. Emphasis on American cases. 345)

Sociology of Occupations (Occupations and professions as interest groupings in work settings and the wider community. 346)

Criminology (Systemic inquiry into alternative definitions of crime, statistical distribution of different types of criminalization, and responses to crime, primarily by the police. 350)


Deviance and Social Control (Deviants, their lifestyles, social organization, and social control. 352)

Environment and Resources (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. Prior completion of 350 is recommended. 360)

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. 363

Social Psychology (Social psychological analysis of social behavior emphasizing its acquisition, its enactment, and its dynamic nature. 370)

Gender in Society (Exploration of gender in society utilizing various sociological perspectives with special focus on women. Emphasis on gender roles, social relations, and gender identities. (Same as Women's Studies 375.) 375

Rural Sociology (3) (Same as Rural Sociology 380.) 380

SPANISH (924)

111-112 Elementary Spanish (3,3) (Introduction to Spanish. May not be taken for credit by students who have failed an equivalent course in Spanish. Must be taken in sequence. Language Laboratory required. 116-118 Honors: Elementary Spanish (3,3) An introductory course for students with a special interest in Spanish.) 116

400 Special Topics (3) Variable topics. Scope of subject matter determined by students and instructor with consent of department. Prereq: Determined by department. May be repeated. Maximum 15 hours.

413 Formal Organization (3) Organizational models, typologies, and the role of the sociologist in research, communication, interpersonal relations in work settings, organizational change.

414 Sociology of Health Care (Organization of health care facilities, staff-patient relationships, demographic characteristics, and prevalence of disease.

415 Sociology of Aging (3) How roles and statuses change with age in relation to the major social institutions. The impact that the rapidly increasing number of older people have on society, the effect of society on older people.

420 Comparative Poverty and Development (3) A critical examination of patterns of poverty and inequality in developing areas of the world, along with a review of major sociological theories which attempt to explain differences in patterns of development. (Same as Afro-American Studies 420.)

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 change. Emphasis on mechanism of capital accumulation and imperialism. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom. 451

451 Criminal Justice (3) A critical assessment of the criminal justice apparatus and its components. Brief examination of the police, with most of the emphasis on the criminal courts and institutions and programs such as the prison, probation, and parole. Analysis of their operation and impacts. Prior completion of 350 is recommended.

455 Society and Law (3) How laws and legal processes are affected by social change, the social impact of legal sanctions, relations between law and social justice. Writing-emphasis course: 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 dynamics of crime, and theories of corporate crime, and organized responses to this type of crime by governmental and 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.

SOCIOL (915)

100 General Sociology (3) Major concepts and theoretical approaches of social sciences with emphasis on cultural, social, and organizational aspects of human behavior. 100

Social Problems and Social Change (3) Increasing social problems and social change, major sociological theories which attempt to explain these processes, discussion of social values such as moralism, violence, crime, inequality, life-style preferences, and environmental abuse within the context of social change. Assessment of control strategies. May be taken instead of 101.

Sociological Analysis (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: Consent of instructor. 200)

Interpersonal Communication (Same as Speech 220.)

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. 310

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 social structure, religion, and society. (Same as Religious Studies 319.)

320 Interpersonal Communication Processes (3) (Same as Speech 320.)

321 Sociological Theory (Survey of contemporary issues and problems in sociology with an emphasis on their historical development and their importance for the field. Students are required to form critical appraisals of the topics addressed. 320)

330 Computers and Society (3) History of computing and computer systems; capabilities of computer applications in various fields; social, cultural, and economic impacts. 330

331 Sociological Research (Selected issues in philosophy of social science, research design, sampling, methods of data collection, and interpretation. Requires written research report. 331)

336 Elementary Social Statistics (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. 336)

340 Class Structure (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. 340)

344 Power and Society (Sociological analysis of the formation and application of nation state policies. Examination of who gets what, why and how. Emphasis on contrasting explanations of the control of the state and the relative autonomy of the state. 344)

345 Collective Behavior and Social Movements (Collective phenomena leading to social change. Response to disaster, popular crazes, and social protests and development, organization, and function of social movements. Emphasis on American cases. 345)

346 Sociology of Occupations (Occupations and professions as interest groupings in work settings and the wider community. 346)

350 Criminology (Systemic inquiry into alternative definitions of crime, statistical distribution of different types of criminalization, and responses to crime, primarily by the police. 350)


352 Deviance and Social Control (Deviants, their lifestyles, social organization, and social control. 352)

360 Environment and Resources (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. Prior completion of 350 is recommended. 360)

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. 363

370 Social Psychology (Social psychological analysis of social behavior emphasizing its acquisition, its enactment, and its dynamic nature. 370)

375 Gender in Society (Exploration of gender in society utilizing various sociological perspectives with special focus on men. Emphasis on gender roles, social relations, and gender identities. (Same as Women's Studies 375.) 375

380 Rural Sociology (3) (Same as Rural Sociology 380.) 380

390 Special Topics (3) Variable topics. Scope of subject matter determined by students and instructor with consent of department. Prereq: Determined by department. May be repeated. Maximum 15 hours.
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 enrichment program with emphasis on basic skills of listening, speaking, writing, and reading. Special attention given to those skills needed for communication with Spanish-speaking people in daily life situations. Grading scales will vary and workload the same as regular sequence. Students with two years of high school Spanish or one year of college Spanish may not take 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 transition course. Class size limited to a maximum of 15 students.

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 study but 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 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 Spanish (3,3) Reading, writing, listening, and speaking. Emphasis on usage and communication in Spanish. Special emphasis in the division course in the language laboratory. Must be taken in sequence. Language Laboratory required. Prereq: 111-112 or equivalent.

217-218 Honors: Intermediate Spanish (3,3) Honors classes are enriched in Spanish. Incoming freshmen are admitted on the basis of a diagnostic test, high school average and performance on the ACT. Classes normally held to a maximum of 15 students. Students follow enriched program with continuing emphasis upon speaking ability and with an introduction to reading literary selections. Students who earn an A in 218 will receive credit for 300. Prereq: 111-112 or equivalent.

291 Spanish Literature in English Translation (3) From the Golden Age, Don Quixote, the picaresque novel, and St. John of the Cross, to the modern, Unamuno, Borges, Fuentes, Marquez, Asturias. No foreign language or major credit. Writing emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

292 Spanish American Literature in English Translations (3,3) Introduction to Spanish American fiction, such as Borges, Fuentes, Marquez, Asturias. No foreign language or major credit. Writing emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

300 Spanish Transition (3) Development of linguistic skills necessary for satisfactory work in courses above 300. Native speakers who want to benefit from additional training beyond 212 in the skills of speaking, reading and writing Spanish. Required for students who want to benefit from additional training beyond 212 in the skills of speaking, reading and writing Spanish. Required for students who want to benefit from additional training beyond 212 in the skills of speaking, reading and writing Spanish. Required for students who want to benefit from additional training beyond 212 in the skills of speaking, reading and writing Spanish. Required for students who want to benefit from additional training beyond 212 in the skills of speaking, reading and writing Spanish. Required for students who want to benefit from additional training beyond 212 in the skills of speaking, reading and writing Spanish.

311 Aspects of Spanish Literature (3) Introduction to Spanish literature, using selections from prose, drama and poetry of the medieval, Golden Age and modern periods. Required of all majors. Prereq: 212, 218 or equivalent.

312 Aspects of Spanish American Literature (3) Introduction to the study of Spanish American literature, with enrichment program with emphasis on works, characters and periods. Required of all majors. Prereq: 212, 218 or equivalent.

323-324 Intermediate Conversation and Composition (3,3) Advanced conversational and written communication in Spanish.

345 Spanish for Business (3) Contemporary Spanish language as it applies to business transactions. Understated business composition letters; oral communication and elements to Hispanic culture related to good business practices. Prereq: 323 or consent of instructor.

411 Foreign Language (1-15) Special EDUCATION (933)

270 Special Education Seminar (1) Introduction to the field; career goals and objectives including observation in the field.

331 Articulation Disorders (3) Prereq: Admission to Teacher Education Program. (Same as Audiology and Speech Pathology 331.)

370 Survey of Exceptional People (2) Definition, characteristics and special needs of exceptional individuals; mainstreaming: historical and legal background of special education; causes-effect relationships; educational settings/adaptations for instruction; professional roles and responsibilities; social adjustments of exceptional persons, adolescents, adults and elderly; and issues in special education. Prereq: Admission to Teacher Education Program. (Same as Education 370.)

371 Audiology (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 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

423 Communication Processes for the Hearing Impaired (3) Expressive and receptive vocabulary development in sign communication. Finger spelling and educational applications of 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, this course covers psychological, psychiatric, social, emotional adjustment, social and communication methodology. Prereq: Psychology 425.

431 Spanish Civilization (2) 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 Cervantistas (3) Emphasis upon selections from Don Quixote and the shorter Novelas ejemplares. Prereq: 311, 312 or equivalent.

433-434 Survey of Spanish Literature (3,3) Survey of Spanish literature through the Golden Age. 430-Spanish literature since 1700. Prereq: 311, 312.

436 Spanish Civilization (2) 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.

437 Latin American Civilization (3) Latin America's di- verse heritage and political institutions. Prereq: 311, 312 or equivalent. (Same as Latin American Studies 437.)

438 Capstone Colloquium in Spanish (3) An integrative course. Prereq: 311, 312 or equivalent. Writing emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

441 Foreign Language (1-15) Special EDUCATION (933)

270 Special Education Seminar (1) Introduction to the field; career goals and objectives including observation in the field.

331 Articulation Disorders (3) Prereq: Admission to Teacher Education Program. (Same as Audiology and Speech Pathology 331.)

370 Survey of Exceptional People (2) Definition, characteristics and special needs of exceptional individuals; mainstreaming: historical and legal background of special education; causes-effect relationships; educational settings/adaptations for instruction; professional roles and responsibilities; social adjustments of exceptional persons, adolescents, adults and elderly; and issues in special education. Prereq: Admission to Teacher Education Program. (Same as Education 370.)

371 Audiology (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 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

423 Communication Processes for the Hearing Impaired (3) Expressive and receptive vocabulary development in sign communication. Finger spelling and educational applications of 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, this course covers psychological, psychiatric, social, emotional adjustment, social and communication methodology. Prereq: Psychology 425.

431 Spanish Civilization (2) 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 Cervantistas (3) Emphasis upon selections from Don Quixote and the shorter Novelas ejemplares. Prereq: 311, 312 or equivalent.

433-434 Survey of Spanish Literature (3,3) Survey of Spanish literature through the Golden Age. 430-Spanish literature since 1700. Prereq: 311, 312.

450 20th Century Spanish Hispanic Theatre (3) Emphasis on major 20th century Spanish American dramatists. Prereq: 311, 312 or equivalent. (Same as Latin American Studies 450.)

459 Capstone Colloquium in Spanish (3) An integrative course. 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 supervised closely by a faculty member. Prereq: Capstone Colloquium in Spanish. Prereq: 311, 312 or equivalent. (Same as Latin American Studies 460.)

471 Latin American Civilization (3) Latin America's di- verse heritage and political institutions. Prereq: 311, 312 or equivalent. (Same as Latin American Studies 471.)

473-474 Survey of Spanish Literature (3,3) Historical survey from the Conquest to late 19th century. 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 vehicle for expressing social ills that have traditionally beset Latin America. Among major themes: indigenismo, Black literature, women writers, the role of the writer in Latin American society. Prereq: 311, 312 or equivalent. (Same as Latin American Studies 479.)

481 Foreign Language (1-15)
320 Interpersonal Communication Processes (3) Social dimensions of interpersonal communication and relationships. (Same as Sociology 320.)

330 Group Communication (3) Small group decision-making, conflict, cooperation, influence, roles, and norms as they affect critical thinking in groups.

350 Communication Theory and Research (3) Survey of communication theories, their applications in society, and the process by which theories are created, tested, and changed.

360 Topics in Communication and Society (3) Content varies. Studies in social function of such communication forms as posters, songs, plays, demonstrations. May be repeated with consent of department. Maximum 6 hours.

370 Evidence and Argumentation (3) Concept of evidence in public controversies, uses and sources of evidence, and conditions affecting credibility.

380 Oral Interpretation of Prose Literature (3) Individual oral interpretive techniques of fiction and non-fiction; ensemble interpretation including readers and chamber theatre forms. Prereq: 260 or consent of instructor. Writing emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

385 Oral Interpretation of Poetry (3) Individual and group performances of poetry. Prereq: 260 or consent of instructor. Writing emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom. May be repeated. Maximum credit limited to 3 hours.

400 Field Experience with Moderately and Severely Handicapped Students (3) On-site teaching experience with moderately and severely handicapped children and youth. Prereq: Admission to Teacher Education Program. Coreq: 452. Satisfactory/No Credit only. Sp.

420 Communication and Conflict (3) Communication as a significant factor in the development, management, and resolution of conflict at the interpersonal, small group, organizational, or societal levels.

440 Organizational Communication (3) Organizational setting and those variables of the communication process that affect the quality of human interaction both within and outside the organization.

445 Internship (1-3) Supervised career-related experiences using Speech Communications theories and techniques in government and for profit or non-profit organizations, culminating in a written and oral report. Reserved for Junior/Senior level majors with at least a 3.0 GPA, or by special permission of Internship Director. S/NC only. May be repeated; maximum 6 hours. Major writing requirement. Credit limited to 3 hours.

460 History of Rhetorical Theory (3) Western rhetorical theory from Plato to the present. May be repeated. Maximum 6 hours. Major writing requirement.


486 Undergraduate Seminar (1) Directed readings and active participation in the Department's undergraduate program. Prereq: Consent of department head. E.

488 Undergraduate Seminar (1) Directed readings and active participation in the Department's undergraduate program. Prereq: Senior standing and consent of Chairperson of Statistics Department Undergraduate Affairs Committee. Satisfactory/No Credit only. May be repeated. Maximum 2 hours.

489 Independent Study (1-15) See description of major concentration.

490 Seminar in Statistics (1-15) See description of major concentration.
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. Basic graphic and multi-view drawing, conventional practices, pictorial techniques and applications, sheet metal development and auxiliary view drafting. Sketching, dimensioning, board work, and CAD. F

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

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

166 Metals Technology (3) Processes, equipment, materials and products of metal working industries. Processes in machine, foundry, forging, heat treatment, sheet metal, and welding. 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 business courses to certify in business education and office technology who have typewriting and/or shorthand courses. Prereq: Department approval. E

261 Architectural Graphics (3) Graphical representation and architecture. Principles of construction, working drawings for a residential dwelling, and CAD techniques. Prereq: 191 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: Consent of instructor. F

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 machines. Prereq: 166 or consent of instructor. Sp

336 Micro Business Applications (3) Operating and programming microcomputers. BASIC language is used and programming examples are oriented in business and programming microcomputers for education, business, and industry. Implications and impact of microcomputers on occupations and everyday living. Open lab for required hands-on experience in operations and programming. F

356 Lab Organization, Management, and Safety (3) Principles of classroom and laboratory organization, management, 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 output processes. Prereq: Admission to Teacher Education Program. F

363 Applications of Integrated Electronics (3) Electrical circuit analysis and IC applications; including amplifiers, oscillators and timing circuits, amplifiers and ICs, an overview of the basic principles and applications of digital electronics through lecture and laboratory experiments and projects. Prereq: Consent of instructor and admission to Teacher Education Program. F


366 Manufacturing Technology (3) Manufacturing system, including researching and developing products, preparing to produce, producing, marketing, and servicing products. Prereq: 165, 166, and admission to Teacher Education Program. 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) Principles and practices of human resource development and performance-based training programs. Prereq: 372 or consent of instructor. F

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 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 the term immediately preceding 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) Principles and processes of educational design and 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 Education (3) Historical background and development needs. Principles of vocational education in business and marketing, curriculum implications, establishing, selling, and maintaining 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 machines. Prereq: Advanced typewriting skill and permission of instructor. Sp

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 typing, 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 is introduced. 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 9 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. Prereq: Consent of instructor. May be repeated. Maximum 6 hours. E

464 Methods and Media in Technology Education (3) Methods and media used in teaching technology education in the secondary public schools. Prereq: Admission to Teacher Education Program. F


466 Course Construction in Technology Education (3) Selection and arrangement of course content. Planning, instructional objectives, project/product selection, assignments and evaluation. Prereq: Admission to Teacher Education Program. Sp

469 Plastic Technology (3) Characteristics and applications of thermoplastic and thermosetting materials. Plastics production equipment related product design and processing of plastics. Prereq: 165 and admission to Teacher Education Program. Sp

470 Supervised Occupational Experience (3-9) Prereq: Admission to Teacher Education Program. F
470 Training for Human Resource Development (3) Orientation to training including roles and functions performed and the needs, costs, benefits, and productivity of training systems.

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

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.

TEXTILES AND APPAREL (971)

101 Apparel Construction (3) Garment construction focused on decision making and time management; pattern alterations, fitting and quality of construction. Not available for credit for departmental majors. F, Sp

120 Textiles I (3) Consumer-oriented textiles: fibers, fabric construction and finishes in relation to use, serviceability and care of apparel and household fabrics. E

230 Apparel Evaluation (3) Analysis of construction techniques and quality relationships; elements and principles of design in relation to garment construction. Prereq: 120. F

232 Design Analysis (3) Apparel design analysis based on flat pattern, draping and drafting techniques; comparison of methods for style variations and costing of garments. Sp

310 Principles of Merchandising (3) Buying practices, procedures, problems, activities, techniques, underlying economic factors and merchandising. Prereq: Accounting 201. F

320 Textiles II (3) Recent developments in fibers, fiber structure, yarn processing, yarn structure and fabric construction; dyeing, finishing and printing; textile performance and evaluation; legislation and standards. Prereq: 120, Chemistry 100-110 or 120-130. F

330 Apparel Production (3) Industrial methods in garment production; focus on stages of production, plant layout, costing and quality control. Prereq: 220. F

331 Computers in Merchandising and Manufacturing (3) Computer-aided design and other computer applications for management, merchandising, design, and manufacturing. Hands-on experiences. Field trips. Prereq: HE 210 or consent of instructor. F

332 Retail Merchandising Applications (3) Foundations and applications of retail operational methods. Prereq: Accounting 201. F

340 Cultural and Functional Aspects of Clothing (3) Cultural, socio-psychological, functional and technological developments in textiles and apparel; integrative approach to apparel and garment contexts. Prereq: 245 or consent of instructor. F

345 Fashion in History (3) Development of apparel styles in western civilization from middle ages to present; factors associated with origin, adoption and abandonment including historic, social and economic settings. Fall

350 Consumers in the Market (3) Consumer decision-making and problems in the domestic and international marketplace; consumer issues and policies, emphasis on consumer choice, information, consumer protection and current issues. Prereq: Economics 201. Sp

390 Introduction to Field Experience (1) Interviews, placement and planning for field experience. Prereq: Approved application for field experience. F

410 Retail Management (3) Retail sector of economy from management perspective, decision-making in retail operations: promotion, pricing, financial planning and control. Computer applications, product mix-strategy. Prereq: 2 semesters Marketing. Sp

415 Fashion Promotion (3) Advertising and special purpose media used to promote fashion merchandise; evaluation of sales promotion activities. Sp

420 Textile Microscopy and Physical Testing (3) Microscopy and physical techniques applied to textile fibers, yarns and fabrics; standard methods and equipment used in physical testing. Prereq: 320. F

422 Textile Fiber Chemistry (3) Chemistry of textile fibers and structure, construction and reaction implications; relating to dyeing and finishing of fabrics. Prereq: Chemistry 350. Sp

450 Textile and Apparel Economics (3) Economics of the United States textile, apparel and fiber industries; emphasis upon production, distribution, institutions, impact upon consumers; international and domestic issues. Prereq: 350 or consent of instructor. Sp


492 Field Experience in Merchandising, Apparel or Textiles (9) Off-campus, cooperative program with business establishments which merchandise or manufacture textiles and/or apparel. Prereq: 390, Coreq: 490. F

493 Directed Study (1-3) Individual problems for Junior and Senior students with special interests in textiles, merchandising or apparel. Prereq: Junior or Senior standing, consent of instructor. E

495 Special Topics (3) Topics in textiles, merchandising, and/or apparel. May be repeated. Maximum of 9 hours. Prereq: Junior or Senior standing, consent of instructor. E

497-498 Internors: Textiles and Apparel (3) Individual problems for Junior and Seniors showing special ability and interest in textiles and apparel. Prereq: Recommendation of Department Head. E

THEATRE (970)

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-Advanced exploration and development of acting techniques through exercises and beginning scene work. Prereq: 220. Writing-emphasis courses: at least one in-class essay examination and 3000 words of writing outside the classroom.

222 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. Prereq: 100.

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 Greek, Roman, Medieval, Elizabethan, and Eastern forms of drama. 311-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.

345 Costume Designing (3) Costume design and construction; basic theory and technique. Production participation required. Prereq: 100.

360 Light Designing (3) Study and practice of stage rigging for theatrical productions; production participation will be required. Prereq: Graduate credit available to theatre M.F.A. students only.

451 Advanced Scenery Technology II (3) Study and practice of metalworking and plastics for theatrical productions; production participation will be required. Prereq: 250. Graduate credit to theatre M.F.A. students only.

452 Advanced Scenery Technology III (3) Study and practice of stage rigging for theatrical productions; production participation will be required. Prereq: 250. Graduate credit available to theatre M.F.A. students only.

453 Scenery Painting (2) Study of materials, techniques, and principles of the craft. Emphasis on gaining skill and understanding through studio experience. Prereq: Consent of instructor.


460 Advanced Lighting and Sound Technology (3) Projects in lighting and sound coordination. May include opera, dance, musical theatre, and "Rock videos". Final projects will be live productions. Emphasis on developing artistic sensitivity and subtleties in control. Prereq: 260.

461 Special Effects in Lighting and Sound (4) Projects in special effects including creative application of technology. Problem solving, drafting, and execution of effects for production emphasized. Production participation required. Prereq: 260 or instructor's permission.

462 Advanced Lighting Design (3) Development of lighting design and theory including areas such as lighting musical theatre, opera, and dance. Prereq: 362 or consent of instructor.
UNIVERSITY HONORS (983)

118-128 Whittle Scholars Seminar (1,1) Sequence limited to and required of all Whittle Scholars in their freshman year. 118 concentrates on contemporary issues in the arts and humanities, 128 concentrates on aspects of leadership. Satisfactory/No Credit grading only.

237, 337, 437 Honors: Concentration in the Humanities (3,3,3) Small group studies of selected topics, issues or problems with a concentration in the humanities. Open to all students with a GPA of 3.25 or greater. Topics vary. May be repeated.

247, 347, 447 Honors: Concentration in the Social Sciences (3,3,3) Small group studies of selected topics, issues or problems with a concentration in the social sciences. Open to all students with a GPA of 3.25 or greater. Topics vary. May be repeated.

257, 357, 457 Honors: Concentration in the Natural and Applied Sciences (3,3,3) Small group studies of selected topics, issues or problems with a concentration in the natural and applied sciences. Open to all students with a GPA of 3.25 or greater. Topics vary. May be repeated.

338-348 Tennessee Scholars Seminar (1,1) Sequence limited to and required of all Tennessee Scholars each year. May be repeated. Maximum 8 hours. Satisfactory/No Credit grading only.

418-428 Seminar on International Travel/Study/Work Overseas (1,1) Sequence required of all Whittle Scholars and must be taken prior to their international experience. Open to all students who intend to travel, study or work abroad. Satisfactory/No Credit grading only.

491 Honors: Foreign Study (3-15) Open to any undergraduate honors student. Proposals must be approved in advance. See the Director of University Honors for further information.

492 Honors: Off-Campus Study (3-15) Open to any undergraduate honors student. Proposals must be approved in advance. See the Director of University Honors for further information.

493 Honors: Independent Study (3-15) Open to any undergraduate honors student. Proposals must be approved in advance. See the Director of University Honors for further information.
PHILOSOPHY OF FEMINISM (3) (Same as Philosophy 362.) Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

WOMEN IN THE GREEK AND ROMAN WORLD (3) (Same as Classics 383.) Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

TOPICS IN WOMEN’S STUDIES (3) Content varies. May be repeated.

PSYCHOLOGY OF SEX ROLE DEVELOPMENT (3)

WOMEN WRITERS IN ENGLAND (3) (Same as English 422.)

WOMEN’S HEALTH (3) (Same as Health 425.)

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.

LITERARY PORTRAITS OF FEMALE WOMEN (3) (Same as French 433.)

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.

WOMEN IN AMERICAN HISTORY (3) (Same as History 453.) Writing-emphasis course: at least one in-class essay examination and 5000 words of writing outside the classroom.

RHETORIC OF THE WOMEN’S RIGHTS MOVEMENT (3) (Same as Speech 466.) Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

AFRO-AMERICAN WOMEN IN AMERICAN SOCIETY (3) (Same as African Studies 483.)

INDEPENDENT STUDY (1-15) Registration by consent of chair of Women’s Studies.